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COMMONWEALTH OF AUSTRALIA — DEPARTMENT OF HEALTH

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Syme Memorial Lecture.[1]

THE CONTROL OF MEDICAL EQUIPMENT IN A NATION AT WAR.

By SIR ALAN NEWTON, P.R.A.C.S., M.S. (Melbourne), F.R.C.S. (England), F.A.C.S.,

Chairman, Medical Equipment Control Committee; Honorary Surgeon, Royal Melbourne Hospital, Melbourne.

I FIRST saw Syme when I was a second-year medical student striving to learn the structure of the human body in the dissecting room. He was one of the senior surgeons of the Melbourne Hospital and was engaged in active surgical practice; but he managed to find time to visit the School of Anatomy, where he encouraged the students to increased effort by pointing out to them the surgical significance of a thorough knowledge of that subject. To those of us who stood shy and hesitant at the doors of the world of medicine, the presence of one whose name was a household word therein was immensely stimulating. It made us feel that now indeed we had become members of a great company whose proud task it was to prevent or to fight disease, and the interest which Sir George Syme took in each one of his students armed all with those arrows of desire which are essential for success in this lifelong battle.

The fact that Syme carried on this work in addition to his many other activities is a striking example of that strict and uncompromising sense of duty which governed all his actions, and when we think of him, let us remember that no man lacking this quality can become a great surgeon. In emphasizing the significance of this fundamental feature of his character, I do not wish to appear neglectful of its other valuable attributes. These have been thrown into strong relief by my distinguished predecessors in this lectureship. I recall, in particular, the first of these lectures, which was given in Syme's presence by my late chief and teacher, Mr. Fred Bird; with great eloquence he praised the humanity, the fortitude, the equanimity and above all the capacity for warm comradeship of his lifelong friend and colleague. But, Mr. President, when I was honoured by an invitation to give this lecture and sought for a subject which would be appropriate, I remembered that, when Sir George Syme retired from active surgical work, his sense of duty led him to continue to serve the State in many ways as a counsellor and adviser. A notable example is his work as president of the Royal Commission on Health appointed by the Commonwealth Government in 1924. It occurred to me, therefore, that an account of the measures employed to control the supply of medical equipment in this country during the war might be considered a suitable subject for a lecture founded to honour Sir George Syme and to keep his memory green.

THE CONTROL OF MEDICAL EQUIPMENT.

The wartime task of controlling medical equipment is performed by the Medical Equipment Control Committee, which has been given adequate powers by regulations under the *National Security Act*. The committee was created in December, 1939, and formed part of the Department of Defence until recently, when it was transferred to the Department of Health. In effect, however, it functions as an interdepartmental committee, being composed mainly of representatives of different government departments. An account of its powers and composition was given in a previous address upon this subject published in THE MEDICAL JOURNAL OF AUSTRALIA in its issue of November 9, 1940, and it is not necessary to repeat this; but it may be of interest to outline briefly the somewhat unorthodox but very efficient organization which has been evolved in order to ensure that adequate supplies of medical equipment will be available for service and civil needs.

[1] Delivered before a meeting of the Victorian Branch of the British Medical Association on June 7, 1944.

In the first place, the committee is not a body which meets in solemn conclave at regular intervals. This time-honoured but time-wasting procedure has been abandoned. A formal meeting is convened only when it is necessary to take action under the regulations by making orders controlling the supply of certain items of medical equipment. In point of fact, it has held only one meeting during the last fifteen months, which is possibly a record and certainly an example for bodies of this kind. In place of formal meetings, there are daily conferences, telephone talks or teleprinter messages linking together its members. These constitute, in effect, a series of "reflex arcs" through which any action taken in any department, which may affect the supply of medical equipment, is at once notified to all the members concerned. It is thus possible by taking immediate action to obey one of the first principles of administration, namely, to avoid being confronted by a disastrous *fait accompli*, for once this has happened, a reversal of the decision results only too often in wounded personal feelings, which may lead to future friction. It is unnecessary to add that the success of this system depends upon the whole-hearted cooperation of all members of the committee. This has been given in full measure at all times; each one has felt that it does not matter who gets the credit provided the work is done.

In the second place, the committee has not exhibited the failing, common in this country, of despising the expert. It has surrounded itself with experts. Medical equipment is not a single entity, but embraces medical, surgical, dental, radiological, pathological and veterinary supplies. These include many thousands of essential items involving problems of procurement, manufacture and distribution of the most diverse and complex character, and expert advice is necessary to solve many of these problems. Official appointments have been made of honorary advisers in radiology, biochemistry and veterinary science, and in addition, certain subsidiary bodies have been formed, such as the following: the Committee of Scientific Liaison Officers, which coordinates research work in methods of production; the Pharmaceutical Advisory Panel, composed mainly of pharmacists; the Dental Advisory Panel, which gives advice upon dental equipment; and the Surgical Instrument Panel, which is concerned with fostering local production. Advice has also been sought and obtained on many occasions from the Council for Scientific and Industrial Research. It will be realized that the committee has not lacked skilled advice, for which I take this opportunity of expressing its gratitude.

Finally, it was necessary for the committee to enlist the cooperation of all those commercial concerns which are engaged in the medical equipment industry, and which range from large wholesale houses possessing millions of pounds of shareholders' funds, down to humble and isolated country pharmacies and stores. Such cooperation, if it is to be anything more than a name, must be given voluntarily; it cannot be developed by coercive action. Mindful of this fact, the committee has established, from the outset, an intimate and frank relationship with representatives of the various divisions of the medical equipment trade. It has made it quite clear that it was determined to obtain adequate stocks of essential equipment and that it expected all business houses to help in this task, but that, unless it was driven to do so to achieve this aim, it did not intend to interfere with normal commercial relationships within the trade. The result of this policy has been most gratifying. The majority of the large business houses have not hesitated to pledge their credit to the uttermost in order to build up reserves of essential imported items of equipment, and many have expanded to an enormous extent in the field of local manufacture. But even these facts do not tell the whole story. The cooperation of the business houses has been so whole-hearted that it has been possible to ration certain drugs in short supply by a system of voluntary arrangements between the business houses themselves, without written agreements or mandatory action by the committee. All this constitutes a striking example of the success of private enterprise in meeting a most difficult situation when it is given reasonable help and guidance by the State. I do not suggest that a little medical Utopia has been created; there have been troubles enough. For example, some importers have looked askance at the development of local manufacture, and certain business houses still believe that they have been unduly hampered by government control. Nevertheless, these difficulties have been insignificant when compared with the magnitude of the work accomplished, and usually they have been successfully overcome by a frank explanation of the economic facts which must govern the policy of a nation which is fighting for its life.

The Framework of the Plan.

So much for the organization which has been set up in this country to control medical equipment; it is comprehensive enough, embracing as it does a directing committee clothed with adequate powers, a body of experts to advise the committee and an industry prepared to cooperate to the full. But you will agree that even the most comprehensive organization, without an equally comprehensive plan of action, would be as futile and pathetic as that person in the song who was "all dressed up and nowhere to go". What of the plan?

There is nothing particularly remarkable about the plan. It consists merely of those measures which would at once appear both necessary and expedient to any person of common sense confronted with the problem of obtaining adequate supplies of essential medical equipment in time of war. It was designed to increase and conserve stocks and has been consistently put into practice since it was adopted by the committee in 1940. It may be of interest briefly to describe this plan, which is still in operation, and which has been drawn up on the assumption that the end of the war is two years away today and is still two years away tomorrow.

I must remind you, at the outset, that the greater part of our medical supplies were obtained from overseas before the war, and that in consequence, the first and most important part of the plan consisted in building up stocks by increasing importation. The first step in this direction was taken before the outbreak of war, when the Government, acting upon a far-sighted recommendation made by Major-General R. M. Downes, then Director-General of Medical Services, who did most valuable work in the medical equipment field, and Dr. J. H. L. Cumpston, Director-General of Health, purchased a reserve supply of medical equipment. This reserve, with additions subsequently made, has been jealously guarded by the committee, and almost literally has been worth its weight in gold. Soon after the war began, the committee fostered to the uttermost the work of increasing stocks held by the trading houses, and it has continued to pursue this policy since that time. Please do not infer that, in pursuit of this policy, it has made importunate and unreasonable demands upon the United Kingdom and the United States of America. Great care has been exercised to avoid asking for undue quantities of essential items, and no governmental sponsorship has been given for the procurement of non-essentials. It was made clear to the authorities in Britain that no Australian would wish to profit at the expense of the Mother Country, which for so long bore almost alone the full weight of this war; he would prefer to go without essential medical equipment rather than to deprive her of it. The result of this policy has been that we have received most favourable consideration overseas and have succeeded in obtaining adequate supplies of the great majority of those essential items of medical equipment which must be imported.

The next feature of the plan was the development of local manufacture. In the case of surgical instruments, this was a task which had to be undertaken at an early stage in the war, owing to the fact that demands made upon overseas manufacturers prevented them from sending instruments to this country. In other divisions of equipment, notably the group of modern drugs of complex chemical composition, due regard had to be paid to the availability of raw materials and to the importance of the finished product in relation to the expenditure of the manpower and material required for production. I

shall refer presently in greater detail to the dramatic results which have been achieved in this field.

It was obviously necessary to arrange for equitable distribution of supplies between various groups of consumers in order that stocks available should be used to the best possible advantage. In this task the committee received the fullest cooperation and help from the medical directors of the fighting services, which soon became the most important consumers of medical equipment. Major-General R. M. Downes was responsible for the formation of the committee and fostered its work energetically; Major-General F. A. Maguire took a great interest in its work; and the present Director-General of Medical Services of the Army, Major-General S. R. Burston, has consistently given most valuable support and advice. Air Vice-Marshal T. E. V. Hurley and Surgeon Captain W. J. Carr have been most helpful at all times. All agreed that, under conditions of total warfare, the requirements of the civilian population for legitimate amounts of essential medical supplies must be met, and that in consequence a policy of absolute priority to the services was not desirable. You will agree, I hope, from your own experience that the balance has been held justly between the demands of all consumers.

The fourth section of the plan related to the compulsory rationing of various items of equipment by means of orders issued under *National Security Act* regulations, in order that available stocks should be utilized only in essential directions. These orders, for the most part, confined sales to a written medical prescription, the only practicable system of rationing medical supplies; but in the case of quinine a further step was taken by making it illegal to prescribe this drug for any disease but malaria. This example was followed by overseas authorities at a later date. It was probably the first occasion on which the medical profession had been ordered to restrict the use of a drug to one disease only.

Another obvious step to preserve stocks was the institution of an economy campaign. This was done by means of professional and public propaganda, which, after a distressing latent interval, produced a most satisfactory response. I am glad to have this opportunity of expressing the thanks of the committee to the medical profession in this country for its help in preventing waste.

A moment's thought is sufficient for a realization of the importance of restricting exports of essential equipment. In the absence of control of this kind, the task of building up supplies might well prove as futile as an attempt to fill a bath without first putting in the plug. The Department of Trade and Customs obtains a recommendation from the committee before it gives permission for the export of essential medical equipment.

The seventh section of the plan consists in accurate recording of the stocks held by trading houses. The Chairman of the Medical Equipment Control Committee has power to obtain this information, and it has been supplied at quarterly intervals so that a close watch can be kept upon the total stocks of essential items of medical supplies.

Another measure of some importance was the consolidation of demands made by the three services. A combined demand is now issued at regular intervals—a procedure which facilitates supply and eliminates undesirable competition. Available supplies are shared equitably between the three services with due regard to the quantity required to meet legitimate civilian needs.

The last feature of the general plan is concerned with the maintenance of the essential structure of the medical equipment industry. It covers a wide range of activities, of which perhaps the most important is a close supervision of the application in this particular field of general restrictive measures rendered necessary by the war. In this work, the committee acts in an advisory capacity to the Department of War Organization of Industry and to the Department of Labour and National Service.

This completes an account of the general framework of the plan of action, which, as has been stated, has been applied consistently during the past four years; but it does not include all the activities of the committee. The committee performs, in addition, a large number of diverse tasks more or less closely related to its duty of ensuring adequate supplies of medical equipment. There is not time to mention these in detail, though they constitute an important part of the work of the deputy chairman of the committee, Colonel F. H. Moran; but it may be of interest to select two or three out of hundreds of examples. Arrangements for the dispatch of what are known in the trade as "sheeps' runners" to a catgut manufacturer, and negotiations for the manufacture of orthodontic appliances in a factory which also makes gas stoves and water heaters, were obviously connected with medical equipment. An urgent request from one of the more torrid regions of Australia, where there appeared to have been an increase in the mortality rate, for the provision of additional undertakers' assistants, was met, but occasioned an academic discussion upon whether the committee was expected to provide "medical equipment" not only for the quick but also for the dead. On the other hand, an imperative demand from another State to supply a doctor with a bottle of fountain-pen ink, which arrived at a particularly busy time, seemed to be the last straw upon the back of a heavily weighted camel, and was refused in words which seemed appropriate.

The Carrying Out of the Plan.

Having given this general outline of the administrative body and its plan of action, I am now placed in a position of some difficulty, because, as there is not time to give anything approaching a complete account of the steps taken by the committee to carry out each section of the plan, I must select one or two aspects of its work for elaboration in this address. I have come to the conclusion that it may be of interest to relate briefly the general story of the work done by the committee during the last four years to build up and conserve supplies of medical equipment, and then to deal in some detail with the dramatic development of local manufacture in this country.

The general story is best told in chronological sequence. It begins early in 1940, when the committee, as I have said, set out to build up essential supplies by importation through normal commercial channels with the help of the trading houses concerned. Government help and sponsorship were given, and customs barriers were cleared away. The result of this crusade was seen towards the end of the year in a most satisfactory increase in stocks, despite the fact that service demands had mounted steadily. There is no doubt that the energetic efforts made at that time by the business houses to build up reserves to the largest possible extent saved the situation in the years to come. The main effort in the field of local production in 1940 was directed to the manufacture of surgical instruments, because, as I have said, these were not available for export from other countries owing to the demands of their own armies for them. Another feature of the year was the inauguration of an economy campaign. You will remember the "prevent waste" posters on the walls of hospitals and the "economy circulars" which arrived in your letter boxes. These were, I believe, the main features of a year which was crammed full of furious efforts to get stocks of essentials by hook or by crook, to build up a real spirit of cooperation between government departments and all other interests concerned, and generally to prepare for at least five years of war. I can imagine a wry smile on the faces of those who shared in the work when they see this bald summary of many months spent in overcoming inertia, in obtaining adequate funds, in simplifying official procedures, and generally in "getting things moving".

In the first half of 1941, the inflow of essential imported equipment continued in response to the efforts just described; but signs were not wanting of a deterioration in the supply position overseas. One reason for this, in so far as the United Kingdom was concerned, was the imperative necessity for using all available manpower to produce goods which could be sold for dollars. The grave state of affairs in this respect was remedied by the decision of the United States to provide supplies under the terms of "Lend Lease". In August, 1941, the committee was informed that future supplies were to be obtained from

this source, and that complete estimates for two years' supplies of all items of essential medical equipment were to be prepared and forwarded to Washington within four weeks. This Herculean task was accomplished by the committee's staff, with the aid of numerous voluntary helpers, and the estimates thus supplied were followed in due course by actual orders. These were collected from the business houses in each of the subsequent years, and consolidated by the committee (acting in a medical advisory capacity to the Division of Import Procurement). It was at once evident that this radical change, involving a "switch" from proved and established commercial supply channels to a single tortuous governmental route, would mean, at the very best, serious delays and difficulties. It seemed prudent, therefore, for this and other reasons, greatly to increase efforts to develop the local manufacture of all items of equipment which could be made from raw materials available in this country. The year ended with the entry of Japan into the war.

The dawn of 1942 saw a complete change in the situation. Service demands for medical equipment increased enormously, not only to meet the requirements of our own forces, but also to furnish supplies to our allies. In addition, it was necessary to equip air-raid precaution organizations, and later in the year, to meet appeals for supplies from the Dominion of New Zealand, which had not been able to accumulate reserves in a manner similar to that adopted in this country. To make matters worse, the inflow of supplies from overseas dwindled to a mere trickle, as compared with the torrent which followed the stimulus given in 1940. Finally, supplies which had been promised by "Lend Lease" authorities failed to arrive, despite cabled protests which lacked nothing in vehemence. During this year we were forced to make large inroads upon the stocks which had been accumulated in the previous years. The outflow was alarming; the inflow was negligible. To meet this situation, the number of rationing orders issued by the committee was greatly increased, a war pharmacopœia designed to limit prescribing as far as possible to drugs manufactured in Australia was prepared, and in short, every possible action was taken to regulate and coordinate distribution. But this was not enough. It was obvious, by the end of this year, that something more must be done to obtain supplies.

It was decided, early in 1943, to send a mission to the United States and the United Kingdom. This mission was composed of Mr. B. Egan, the representative of the Division of Import Procurement on the committee, and Colonel C. Wallace Ross, the senior medical equipment officer of the Army Medical Directorate. They flew across the Pacific in a bomber plane, and as it happened, were passed *en route* by Lieutenant-Colonel J. A. Doull, of the United States Army Medical Corps, who had been dispatched to Australia and New Zealand as the personal representative of Mr. Stettinius, then "Lend Lease" administrator, to investigate the position of medical supplies. Lieutenant-Colonel Doull made the most searching and able investigation of the state of affairs here, and then reported very favourably upon the control of supplies in Australia and advised that the recommendations of the Medical Equipment Control Committee should be accepted. He indicated that we were not making excessive or unreasonable demands. The Egan-Ross Mission did most valuable work in the United States and the United Kingdom and won high praise from the authorities in both these countries. The tangible result of their efforts was the arrival, in the latter half of 1943, of large supplies in response to orders placed early in 1942. At first the bulk of these stocks came through "Lend Lease" channels, but a most important result of the visit paid to the United Kingdom by the mission has been a great revival of exports from that country to this. It is true that these are strictly controlled by the Ministry of Supply in London and that it is necessary to forward an annual programme in advance, so that production can be planned well ahead; but the fact remains that the result has been the revival of a most desirable flow of trade within the Empire. It followed that, by the end of 1943, much of the ground lost in 1942 had been regained. For this we must thank the magnificent efforts in the production field in the United Kingdom, the United States and, as I shall presently describe, in Australia.

The improvement apparent in 1943 has been continued, broadly speaking, in 1944. It is true that certain shortages remain not only here, but also overseas. For example, microscopes are scarce, and it is essential to do everything possible to avoid making unreasonable demands for imported items of X-ray equipment. The committee has controlled the sale of new X-ray tubes. It is definitely unpatriotic for anybody to seek permission to purchase new tubes without the most cogent reasons, and it is essential to take the greatest care of those in operation today. Economy is also essential in the use of all rubber medical equipment, and the supply of certain other items is still causing us some anxiety. I mention these facts because I have emphasized the generally satisfactory state of affairs, and I fear that you may conclude that there is no longer any necessity to be careful of medical equipment.

This brief historical summary makes a picture similar to those seen in illustrations of surgical operations, in that all the blood has been left out; but I hope it will serve to give you some impression of the way in which the situation changed with the passage of the years, and the progress of the war.

Now let us turn our attention to the development of local manufacture of medical supplies in Australia. It is unnecessary to remind you that, prior to the outbreak of war, this was limited to certain galenicals and some appliances and special instruments. There has been a tremendous expansion in the last three years in all the divisions of medical equipment; but here again, in the time at my disposal, I shall be unable to do more than refer to a few highlights of the general effort.

No Australian can contemplate the development in production of drugs in this country since the outbreak of war without a proud consciousness of national achievement, which is particularly justifiable in that most important group included in the field of synthetic organic chemicals. In my student days, physicians felt that, as it were, they had "found the answer to the sum" when they had arrived at a diagnosis. The cure was left largely to nature; medical treatment, with a few exceptions, consisted mainly in the administration of palliatives. The past thirty years have witnessed an unparalleled and magnificent advance in therapeutics, with the result that today the physician can be in very truth a healer. This dramatic change has been due, in large measure, to that modern chemotherapy which had a foundation in various investigations into the organic chemistry of dyes.

You will readily understand that many problems had to be overcome before it was possible to begin production of drugs in this group. In the first place, a supply of foundation chemicals was necessary to enable the synthesis of a complex product to be undertaken. In the second place, it was essential to discover a process applicable to industrial conditions in this country. Finally, most complex plant and machinery had to be built. Let us begin with a brief review of what has been done to surmount these difficulties.

Our pre-war chemical industry was very small, but the remarkable work accomplished by the Ministry of Munitions has been of the utmost assistance. Due consideration had to be given, of course, to the relative importance of munitions and of medical demands upon basic chemicals before a decision was made upon the production of any particular drug. To quote only a few examples, such components required for this purpose as caustic soda, ammonia, alcohol, benzol, aniline, chlorine, sulphuric acid and calcium cyanamide are all produced locally. Primary and secondary chemicals such as these form the backbone of the industry.

Continuous research into methods of production is vital to the well-being of any large industrial concern today. Most large Australian business houses recognize this fact, and their research chemists have done splendid work in evolving methods for the production of drugs. But the rapid expansion which has taken place in so short a time

made demands which could not be met by these men alone. Fortunately for Australia, her universities possessed a group of brilliant organic chemists who were able to assist. Special mention must be made in this connexion of the Drugs Subcommittee of the Australian Association of Scientific Workers. This body, which included among its members Dr. V. M. Trikojus, now Professor of Biochemistry in the University of Melbourne, Dr. Adrien Albert and Dr. Lemberg, worked at the University of Sydney. You will realize the importance of their work when I tell you that they devised practical processes for the manufacture of ascorbic acid, "Acetarsol" "Acaprin", phenobarbitone, proflavine, "Monacrin", mersalyl, nicotinamide, "Uroselectan", "Perabrodil" and sulphaguanidine. In addition they collaborated in other similar work, and further, actually manufactured in the laboratory substantial quantities of certain of these drugs until such time as industry was able to undertake production. In referring to the work done by this Drugs Subcommittee, the contribution to the national effort made by many other research workers must not be overlooked.

Given a supply of raw materials and a knowledge of the process of production, there remains the difficulty of designing and constructing the plant and equipment required for commercial production. This involves large factories covering many acres, and the manufacture of hundreds of items of special equipment apart from the usual factory requirements of water, power *et cetera*. The plant includes stainless steel and glass-lined vessels together with presure-resistant equipment of types never hitherto manufactured in Australia. Enormous difficulties had to be overcome, sometimes by the adoption of unusual methods. Not the least interesting of these was the repair of tiny flaws in the vitreous enamel linings of certain large vessels by means of gold fillings inserted by the committee's dental equipment officer, Dr. C. H. Down. The staff of some of these factories includes thirty chemists and as many engineers. This information will give you some idea of the magnitude of the undertaking. It has to be seen to be believed.

These were the chief difficulties which had to be overcome before large-scale production of drugs was possible. Now let us consider what has been produced. I do not propose to give the full list of drugs because there is not time to do so. This is regrettable, because it means that I cannot mention all the business houses which have made important contributions to this work. Full information is preserved in the files and reports of the committee, and some day will be published in detail. The story of some of the more important may be summarized as follows.

The Sulphonamides.

Early in 1942, Monsanto (Australia) Proprietary, Limited, was asked to make sulphanilamide. After careful consideration of raw materials, involving mainly aniline (obtainable from Timbrol, Limited, New South Wales), acetic acid, chlorsulphonic acid (Commonwealth Fertilizers and Chemicals, Limited, Victoria), ammonia (Imperial Chemical Industries of Australia and New Zealand, Limited, Victoria) and alcohol (Colonial Sugar Refining Company, Limited, Queensland), the company promised to be in production in nine months. It kept its promise and has produced many tons of this drug since that time. This production, however, is hypothecated at present for the manufacture by this establishment of another drug in this group, sulphaguanidine. The story of the latter drug began in 1941, when the Drugs Subcommittee was asked to investigate production. Professor Trikojus devised an improved process. Then came the war in New Guinea, where, before long, dysentery was rife. Major-General Burston ordered that every man who developed diarrhœa must be given sulphaguanidine. Professor Trikojus and a helper, Mr. G. K. Hughes, manufactured a substantial quantity by working in shifts day and night at the University of Sydney. This, along with the first amount commercially produced, was sent to New Guinea, and the epidemic of dysentery was stamped out. If this drug had not been available, there might well have been a very different end to the Kokoda battle. Today, adequate supplies are available for our own troops, stocks have been released for the civil population, and, last but by no means least, 200 tons have been ordered by the British Army and will have been supplied in full by the end of next year.

In April, 1943, a time when the ravages of malaria were causing the greatest concern to army authorities, there was evidence that another member of the sulphonamide group, sulphamerazine, might be of great value in the treatment of this disease. At the request of the committee, one of its scientific liaison officers, Professor A. Killen Macbeth, of the University of Adelaide, devised a process for its production in a remarkably short space of time by most able and unremitting work in his laboratory. Quantities of the drug produced by him were used in a field experiment conducted by Brigadier N. H. Fairley under the direction of Major-General Burston. As some time elapsed before these experiments could throw light upon the efficacy of the drug in the treatment of malaria, and as great difficulty was being experienced in obtaining essential supplies of drugs from overseas, it was decided, by the highest authority, to proceed forthwith to manufacture this drug in Australia, so that adequate quantities should be available without delay if experimental work justified its use. The work of production was entrusted to Imperial Chemical Industries of Australia and New Zealand in May, 1943, and it is probably the most striking development in synthetic organic chemistry yet undertaken on any such scale in this country. The manufacture involved ten major processes. To produce one ton of the drug, it was necessary to handle thirty tons of raw materials, over 15,000 gallons of solvents and ten tons of the main intermediates. Construction of a pilot plant was begun at once, and the plant commenced operation in three weeks. The main plant had to be designed before the time when all details of production were known. This unique position was met by devising a plant capable of the most flexible rearrangement to meet developments as these occurred. Many of the hundreds of items of equipment had not been made previously in Australia. All these difficulties were overcome, and materials began to move through the main plant in November, 1943. This plant has been in full operation since the beginning of this year. The prodigious and dramatic achievement of producing large quantities of this new member of the sulphonamide group seven months after the day when the first sod was turned on the factory site speaks for itself. Even if it should prove less useful in malaria than was hoped, sulphamerazine remains at present the sulphonamide of choice in the treatment of those diseases in which this group is so valuable.

Penicillin.

In July of last year, the committee was asked to endeavour to obtain some penicillin for the treatment of a child who was suffering from pneumococcal meningitis and had not responded to sulphonamide treatment. A cable message was sent to Washington on a Saturday morning by the Division of Import Procurement, at the request of the committee. The Director-General of Australian War Supplies Procurement obtained 1,000,000 units from the Surgeon-General in Washington and dispatched it by aeroplane to the west coast of America that afternoon. There it was transferred to a bomber plane and was delivered to the hospital on the following Thursday. The child, who had been in a stuporose condition for some time, was able to eat bacon and eggs four days later and is well today. As a result of the successful treatment of this patient, the committee made appropriate recommendations which led to the dispatch by the army of two officers, Captain P. L. Bazeley, formerly a member of the research staff of the Commonwealth Serum Laboratories, and Lieutenant A. H. Kretchmar, by air to America to investigate the newest methods of production. Early in February of this year actual production began at the Commonwealth Serum Laboratories. It has been possible to meet service demands, and further, to liberate supplies to the civil population at an earlier date than in any other country. These supplies are strictly controlled by an order issued by the committee. This magnificent

achievement reflects the greatest credit upon the Commonwealth Department of Health. The Director-General fostered the project in every possible way with all his striking administrative qualities and driving force. His responsible officers cooperated to the fullest extent; but the lion's share of the credit must go to Captain Bazeley, who has done the main part of the work with marked ability and remarkable energy.

"Acaprin."

"Acaprin", a veterinary drug, is the sole specific for tick bite fever, a fatal disease of cattle. It was obtainable only from Germany before the war, and supplies were needed in 1941 by the Queensland Government. Two years' stocks were manufactured by the Drugs Subcommittee of the University of Sydney at the Sydney Technical College under the supervision of Dr. F. Reuter. It was a most unpleasant synthesis involving poisonous phosgene gas; but its successful accomplishment was of the utmost significance on the "food front".

Vitamins.

Ascorbic acid (vitamin *C*) is manufactured by the Colonial Sugar Refining Company, by means of a process devised in 1941 by the Drugs Subcommittee at the request of the Medical Equipment Control Committee. This was an example of a fortunate forecast, inasmuch as supplies were available in the following year to meet the needs of troops fighting in the Pacific islands.

The local fish liver oil industry was begun by Nicholas Proprietary, Limited, in 1940, an example soon followed by other business houses. The oil is rich in vitamin *A*, but poor in vitamin *D*. At first there was an exportable surplus, but owing to increased local demands, and to decreased supplies due to the diversion of fishing boats to service uses, present production is not sufficient to allow of exports to meet the urgent requests of the United Kingdom for vitamin *A* concentrate for the fortification of margarine. Steps are being taken by an interdepartmental committee to remedy this position.

Vitamin *E* is produced from wheat germ oil, but the remaining vitamins must be imported.

May I say in passing, that no other item of medical equipment has been so troublesome to the committee as vitamins. It is extremely difficult to determine the quantity which should be provided to meet legitimate demands, because of the existence of what may justly be termed a "ramp". Vitamins are prescribed indiscriminately, commercial interests push sales by skilful advertising, and the public, impressed by the name of the product, becomes an easy prey. This has given rise to an enormous illegitimate demand. It is not uncommon today, for example, to find nurses advising patients to take vitamins as tonics. Any help which the medical profession can give in overcoming this abuse will be much appreciated and will be a patriotic action. Waste of essential drugs in patent medicines can be controlled by limiting their use to a written medical prescription; but in view of the legitimate use of vitamins in baby health centres and similar institutions, the committee is reluctant to control sales in this way unless it is forced to do so.

Other Chemical Drugs.

Other chemical drugs form an imposing list, of which I shall quote only the following examples. Phenol is produced in quantities sufficient to meet both medical and industrial needs. Profiavine is produced by Timbrol, Limited, and "Monacrin" by Bayer Pharma Proprietary, Limited. The processes were devised by Dr. A. Albert, whose work on amino-acridines is well known. Phenacetin has been manufactured by Beckers Proprietary, Limited; this house has also built a factory for the production of paraldehyde as a direct contribution to the war effort. Chloral hydrate is being manufactured by Lockwood, Magrath Proprietary, Limited. Dextrose for oral administration has been produced in Australia since 1940; but recently, at the request of the committee, the manufacturers, Glaxo Laboratories (Australia) Proprietary, Limited, have manufactured chemically pure dextrose suitable for intravenous injection. Mersalyl, a mercurial diuretic, was synthesized by Professor Trikojus and Mr. Falk and is now in production by Bayer Pharma Proprietary, Limited. The manufacture of phenolphthalein has been achieved by Watts Winter (Manufacturing) Company, that of colloidal silver preparations by H. R. Watkins, that of barium sulphate for radiological use by A. N. Rodda Proprietary, Limited, that of iron and ammonium citrate by A. M. Bickford and Sons, Limited (Adelaide), and that of magnesium carbonate and trisilicate by F. H. Faulding and Company, Limited, of Adelaide, and by other houses. Salicylic acid, aspirin and formaldehyde are in production at the works of Monsanto (Australia) Proprietary, Limited. Magnesium trisilicate and bismuth salts are produced by Elliotts and Australian Drug Proprietary, Limited. Parke, Davis and Company have developed an injectable liver extract. This year Felton, Grimwade and Duerdins Proprietary, Limited, will begin production of phenobarbital and Nicholas Proprietary, Limited, will soon be in production of an organic arsenical preparation. There are other products manufactured by other establishments, but there is not time to tell the whole story. Enough has been said, I hope, to convince you of the magnitude of the effort made in the chemical field.

Vegetable Drugs.

Early in the war, the Plant Division of the Council for Scientific and Industrial Research, in association with Mr. H. Finnemore, Reader in Pharmacy at the University of Sydney, undertook at the request of the committee an investigation into the possibility of production of vegetable drugs. Alkaloids, notably hyoscine and hyoscyamine, were found in the genus *Duboisia*, a group of small trees occurring naturally in the north of Australia and in Western Australia. The leaves of these trees had been used by the aborigines, who threw them into streams to stupefy fish. Today large quantities of these alkaloids are produced from *Duboisia* leaves by an Australian house, Felton, Grimwade and Duerdins Proprietary, Limited. Hyoscine was in short supply everywhere until the development of production in this country. We now supply the United Nations with hyoscine, and we also export quantities of atropine, which is obtained from hyoscyamine as a laboratory conversion. Homatropine is also produced in amounts adequate to meet our needs.

A factory erected by Felton, Grimwade and Duerdins Proprietary, Limited, has produced morphine and codeine from locally grown poppies. The same house produces all the digitalis required from foxglove plants grown in Victoria. Professor R. D. Wright and Dr. F. H. Shaw, of the Department of Physiology in the University of Melbourne, are investigating the extraction of quinine from cinchona trees grown in New Guinea.

Ergot, until recently in short supply, has been produced by Mr. H. A. Barnham, a farmer at Werribee. Research by Mr. H. A. J. Pittman, of the Victorian Department of Agriculture, has shown that the yield is greatly increased by dissemination of the fungus through the rye by blowflies, which are attracted by rotten meat thrown into the crop.

Other Drugs.

This account of new manufacture relates to drugs of general interest to the civil population today. I must mention, in addition, some which have been manufactured for military purposes. These are dimethyl phthalate, dibutyl phthalate and "D.D.T.", mosquito and mite repellents of great value, made at the instance of the army medical services by several Australian houses, and "Merthiosal", required mainly for the preservation of blood serum, which was produced in the laboratories of Professor J. C. Earl at the University of Sydney. Professor Earl has been Chairman of the Drugs Subcommittee since 1941.

Comment.

The foregoing are some of the most impressive illustrations of the conversion of an industry, which before the war confined itself in the main to processing imported drugs in order to prepare these for retail sale, to its

present standard of manufacturing achievement on a scale which has given an exportable surplus of some important drugs. I must not forget to mention the fact that even before the war there were two important manufacturing activities in the therapeutic field. The first of these was the Commonwealth Serum Laboratories, established as a result of the vision of Dr. Cumpston, who has never received sufficient credit from the medical profession for this valuable work. The output from this source has increased enormously, and large quantities of its products have been exported to India and elsewhere. The second is Woolwich Elliott Chemical Company Proprietary, Limited, which produced ethyl chloride and ether. Very large amounts of anæsthetic ether have been supplied to Russia at the expense of the Commonwealth Government, considerable stocks have been exported to India, and all service and local requirements have been met, largely from the production of a special factory erected at the request of the committee.

I trust that what I have said will enable you to appreciate the effort which has been made in the field of drug production. It is perhaps difficult to understand this at first sight, because the end-product is often nothing more than a tiny tablet—much less impressive than a gun or a tank. But the research work, the plant, the equipment and the toil necessary to produce the tablet may surpass those required to build many of the more formidable weapons of war.

Surgical Dressings.

Now let us examine another division of medical equipment—surgical dressings. Here production has been hampered by the fact that the local cotton crop is inadequate to meet demands upon it, with the result that the industry must rely upon imported stocks of this commodity. Cotton wool has been manufactured locally, mainly from imported cotton, for many years by Johnson and Johnson Proprietary, Limited, and Cotton Dressings Proprietary, Limited, and though factory production has been strained to the uttermost to meet service requirements, supplies have been maintained at a satisfactory level. A new development during the war has been the production of surgical dressing gauze by Australian factories; but the equipment devoted to this task was very limited, owing to the imperative need for other woven products such as cotton duck *et cetera*. It has been necessary therefore to import the bulk of our requirements of dressing gauze. Manufacture of adhesive strapping has been begun by two houses since the war, Johnson and Johnson Proprietary, Limited, and Greenhalgh's Proprietary, Limited. Supplies of rubber for this purpose have been made available; but production has been limited owing to difficulties in obtaining from overseas adequate amounts of cloth backing. The demand has been controlled by limiting sales to the production of an order from a medical practitioner or a registered nurse, and it is believed that local production will meet the demand controlled in this way. It is fortunate that this manufacture was begun, because it would have been undesirable to make large overseas demands for a material of which rubber forms a raw component, in view of the fact that this commodity is in short supply everywhere among the Allied Nations. Acting upon the suggestion of Dr. L. J. J. Nye, of Brisbane, the committee asked the Davis Gelatine (Australia) Proprietary, Limited, of Sydney, to produce a special glue, which, when painted over a bandage, has been found to be an effective substitute for adhesive plaster in certain cases. It is imperative that the use of adhesive plaster be reduced to the essential minimum. Please help to do this.

Surgical Instruments.

The surgical instrument industry in Australia was insignificant at the outbreak of war. Except for a few instruments made from imported drop forgings and for the occasional manufacture of special instruments to the order of individual surgeons, the work was confined mainly to repairs of imported instruments. There was the merest handful of workmen skilled in this highly specialized craft. It was essential to expand the industry as widely and as rapidly as possible, because, as I have said, it was no longer possible to import surgical instruments from overseas. The goal of large-scale production has been reached after a struggle to overcome innumerable obstacles which blocked the way. The first step consisted in the standardization of instruments required by the army to a minimum essential range. Manufacturers were forbidden to make instruments not included in the essential list. This was followed by action to train youths as instrument makers and to declare instrument factories "essential undertakings" in order that employees should be controlled. The Surgical Instrument Panel was formed in order to bring about a close liaison with the Ministry of Munitions, so that machine tools and materials would be more readily procurable. It was necessary to arrange for production of steel of that special temper necessary for instrument work. Direct financial assistance was given in a few instances, but for the most part the work was financed by large orders placed by the services. Finally, as the demand for instruments continued to expand with deterioration of the general war position in 1942, it was decided to make drop forgings of 25 of the commoner types of instruments instead of continuing with the slower and more laborious production by hand forging methods. It was not an easy task to find a factory which could undertake the work of cutting dies and making these forgings; but the Newport Railway Workshops in Victoria came to the rescue. Problems new to engineers who had never previously undertaken work of this type were overcome, with the result that many thousands of drop-forged instruments have been turned out at Newport and sent to the various factories for fitting and finishing. The instruments produced are thoroughly serviceable, and there is now a surplus for the replenishment of civilian stocks. Establishments which have made notable contributions to this effort are H. A. Taylor Surgical Proprietary, Limited. the Surgical Manufacturing Company (Australia) Proprietary, Limited, Elliotts and Australian Drug Proprietary, Limited, and R. L. Smith and Company (Adelaide). Perhaps I can best indicate the remarkable expansion of the industry by mentioning that production has been expanded from a pre-war annual value of approximately £5,000 to over £300,000 today.

Similar expansion has taken place in the production of sterilizers, autoclaves, operating tables and all operating theatre equipment.

Many types of special equipment for service use have been designed and produced in very large quantities. For example, a special factory has been built by Elliotts and Australian Drug Proprietary, Limited, for the manufacture of sterile solutions for intravenous administration and of transfusion apparatus. The same house has produced to army design tubes of morphine fitted with needles for administration to wounded men by their fellows. Field warfare demands, in addition to the usual items of equipment, a large number of such ancillaries as basketwork containers, special types of packings for drugs and various adaptations of common appliances. All these have been produced as required, both for our own services and for those of our allies.

The production in Australia of hypodermic syringes is a notable feat, which would have been considered impossible before the war. The production by Australian Consolidated Industries, Limited, of suitable glass tubing, and the discovery of a workman with previous European experience of production methods, overcame the two chief difficulties, and two years ago manufacture began at the Footscray factory of T. and H. Proprietary, Limited. When it was in full swing, the factory was burnt to the ground. A new factory was erected near Oakleigh; but had scarcely begun operation before the managing director died suddenly, and the future of the project was once again clouded in doubt. Fortunately the business was purchased by Noyes Brothers (Melbourne), Limited, and the production rate is now considerable. This is yet another instance of successful accomplishment despite innumerable difficulties and vicissitudes.

Medical equipment manufactured from rubber is being produced by several houses under the direction of the

Rubber Control Board, which seeks advice from the committee. This advice has been based upon the principle that, owing to the slender stocks of rubber, manufacture must be restricted to the barest essentials, and distribution of the goods must be rigidly controlled. For example, the committee could not recommend that rubber teats for eye-droppers were essential, in view of the fact that finger pressure on the top of a glass tube is an adequate substitute. Rubber gloves, though not so universally necessary as a younger generation of surgeons may believe, must be manufactured so long as rubber is available for the purpose. Research work is in progress in order to bring about improvements in the quality of gloves produced locally. Drainage tubing and rubber catheters and similar appliances are also essential. Certain other rubber articles, such as hot-water bottles, are not absolutely essential, because substitutes can be used. Certain stocks have been obtained, and in order to make these last as long as possible, sales have been restricted to orders signed by medical practitioners and matrons of hospitals. I know the disadvantages of this provision from the practitioner's point of view. He is besieged by importunate claimants. It may be of interest to him to ask all of these whether it is justifiable to deprive a sick child in a hospital of a rubber bottle in order that their demands should be met. I am not very optimistic about the replies he will receive; but some such question will give him interesting, if melancholy, information about the relative numbers of "sheep" and "goats" in his practice. There is today a limited supply of rubber. When this is consumed, there may be none. We must economize to the uttermost in its use, remembering that reconditioned rubber is valueless for most medical purposes.

Dental Equipment.

Measures similar to those adopted in the surgical instrument field were applied to foster the production of dental equipment; this became scarce throughout the world, owing to large service demands rendered necessary by the fact that all recruits had to conform to a high standard of dental fitness. The foundation upon which large-scale production had to be built was just as insignificant as was the case with surgical instruments, and the development has been equally imposing. Today, Australia is making all her own requirements of chairs and units, metal syringes, lathe accessories and many other items of dental equipment. In fact, the notable deficiencies in the list of locally manufactured essentials are only three—namely, burs, handpieces and artificial teeth—and limited production of the last two items has begun. The Dental Materials Research Laboratory has been most helpful in testing new products and thus helping the manufacturers to achieve a high standard of quality. Notable contributions have been made by Pyramid Dental Company, Woods Gibling Proprietary, Limited, Electro-Dental Manufacturers (Australia) and Amalgamated Dental Company, Limited.

X-Ray Equipment.

No X-ray tubes or valves have been made in Australia, owing to the fact that the demand would not justify the capital outlay and technical difficulties involved in the manufacture of small numbers of a wide variety of types. For the same reasons, no attempts have been made to produce intensifying screens, high-grade electrical meters, grids and cables, which must also be imported. With the exception of these components, all types of complete X-ray equipment and accessories are manufactured in Australia. Since the war, manufacturers in this country have supplied all service and civil demands and their products compare favourably with those imported from manufacturers overseas. The manufacturers concerned are Watson Victor Limited, Ultrays, and Stanford X-Ray Company, Limited.

Glassware.

Before the war Australia was dependent upon imported supplies of glassware for scientific and pathological work; but it soon became evident that local production must be fostered if serious shortages were to be avoided. Fortunately the glass industry in this country was so well advanced that, despite manpower difficulties, shortages of moulds and other troubles, an extensive range of scientific glassware is produced today by three manufacturers, Crown Crystal Glass Company, Precision Glass Instrument Company and Neon Signs (Australia) Proprietary, Limited.

Laboratory Requirements.

A similar expansion has been achieved in the production of laboratory chemicals, dyes, stains and indicators.

Agar-Agar.

Another notable advance has been the production in New Zealand and Australia of agar-agar suitable for culture media. This material, which is manufactured from seaweed, was a Japanese monopoly before the war. Aware of this fact, the committee and the army purchased a reserve in 1941; but the development of local manufacture enabled the committee to meet an urgent demand from India for agar-agar for the purpose of growing cultures from which to make plague vaccine for use in the areas recently devastated by famine—a fact which clearly demonstrates that the forethought exercised in Australia was not universally practised. In point of fact, we did more than send the agar-agar; it was accompanied by quantities of the plague vaccine itself, manufactured by the Commonwealth Serum Laboratories.

Veterinary Equipment.

The final section, veterinary equipment, has benefited by the great expansion of local production already described. The development of the surgical instrument industry has made possible the manufacture of veterinary instruments, and many of the drugs now produced are used in veterinary work.

CONCLUSION.

This completes all that I have time to tell you tonight of this spectacular story of the prodigious achievement of this country in the production of medical equipment. Much of it perforce has been left untold, but enough has been said to convince you of the magnitude of the effort. It has been accomplished by intelligent and reasonable cooperation between governmental authorities and agencies and commercial houses aided by the efficiency and energy of all those who did the actual work, whether administrators, directors, managers, research workers or (last but by no means least) the honest craftsmen in the factories. Thanks to their efforts, there has grown up from very slender beginnings an industry capable of supplying a large part of our needs, and further, many of those of our neighbours. The annual value of our exports of medical equipment and supplies today is more than a million pounds, and there is every reason to believe that, with competent management in this country, this export trade can be expanded in the post-war period to the countries in the near north of Australia. In other words, the developments in this field forced upon us by wartime conditions will be of great value when we are once more at peace. They will be, I believe, a permanent asset to the country, and will continue to flourish when our striking advances in other fields of wartime manufacture have become matters of historical interest only.

You may wonder why I have devoted so much space to an account of local production in a lecture upon the control of medical equipment. The best way of exercising control of anything is to get so much of it that control is unnecessary. The best way to get medical equipment in a world at war is to make it. The fact that we have helped ourselves in this way has led the United Kingdom and the United States to give favourable consideration to our requests for those things which we cannot make. Another factor of some importance is that it is realized overseas that the control of medical equipment in this country has been comprehensive and competent. For these reasons, we have not as yet experienced any catastrophic shortages of medical supplies. But we are

still at war, and in war we must go on working together with all our might, never unduly elated and never depressed, until our enemies cry for peace. When this time comes, I hope and believe that we shall be able to say that we have never lacked an efficient salve for every sore.

ACKNOWLEDGEMENTS.

One word in conclusion: I have given this address about the production of medical equipment in Australia; but I have not done the work. The whole credit is due to others. Of these, I must mention first Colonel C. Wallace Ross, who has done magnificent work in the equipment division of the Army Medical Directorate since the outbreak of war. His remarkable knowledge and ability have been of the highest value to the committee ever since it was created, and I am glad to have this opportunity of making a public acknowledgement of his services. He has organized the exhibit of medical equipment made in Australia, which, with the permission of the Director-General of Medical Services of the Army, has been made available to illustrate this lecture. Next I must thank my colleagues on the committee, Mr. B. Egan, of the Division of Import Procurement, Mr. G. A. Davis and Mr. J. R. Borland, of the Department of Supply and Shipping, Mr. C. W. Andersen, of the Department of War Organization of Industry, Mr. A. E. Leighton, of the Ministry of Munitions, Colonel M. J. Holmes, of the Department of Health, and Dr. Byron L. Stanton, representing the British Medical Association. Great assistance has been given by the following research liaison officers: Professor E. Ashby, Professor J. C. Earl, Professor A. Killen Macbeth and Professor R. D. Wright; and also the technical advisers to the committee: Dr. C. E. Eddy, Physicist-in-Charge, Commonwealth X-Ray and Radium Laboratory, Professor V. M. Trikojus, Professor of Biochemistry of the University of Melbourne, Dr. C. H. Down, senior lecturer in charge of the Department of Conservative Dental Surgery, University of Melbourne, and Dr. L. B. Bull, Chief of Division of Animal Health and Nutrition of the Council for Scientific and Industrial Research. Finally, Colonel F. H. Moran has done splendid work as Deputy Chairman and Executive Officer of the Surgical Instrument Panel, and the other members of the staff of the committee, notably its Executive Officer, Dr. C. V. Mackay, and its Secretary, Mr. F. W. Ritchie, have been most efficient. Colonel J. H. Anderson, a former student of Sir George Syme, has done most valuable work at the High Commissioner's Office, in London.

These inadequate acknowledgements leave me carrying an enormous burden of the unexpressed, which is perhaps relieved to some extent by the fact that these men, in doing this work, have been rewarded by the knowledge that they were maintaining that tradition of public service established by the best of our forefathers and so sedulously fostered during his lifetime by him in whose honour this lecture was endowed.

PSYCHIATRY YESTERDAY AND TODAY.

By E. S. MEYERS,
Brisbane.

A REVIEWER in THE MEDICAL JOURNAL OF AUSTRALIA of February 5, 1944, wrote as follows:

> Psychiatry was unprepared to meet the task imposed by the last world war, but, in the intervening years, great strides have been made; and the present conflict finds psychiatry ready to play an impressive part in the present struggle.

While the first two assertions contained in the paragraph are no doubt true, the last is far from being an exact statement of the real condition of affairs. Furthermore, the question whether the medical profession as a whole today is more interested or proficient in the practice of psychiatry than were those practitioners in the days before the first world war, is a matter of importance to the theme of this dissertation.

When some of us were very young and medical students at the University of Sydney, psychiatry was not so called, the studies now coming under that name being known as "psychological medicine". The syllabus consisted, for the most part, of lectures on insanity. This is not surprising, as although no statistics are available to me to prove the statement, functional nervous disease was probably much less prevalent then than today.

There are many reasons why this should be so. A generation ago the problems of life were less complex than today. This was true whether an individual was a member of one or the other of the two most numerous classes composing society—those who had too much and those who had too little. The former's main problem was how to enjoy leisure; the latter were fully engaged in long hours of work and too fully occupied to suffer from functional nervous disease. They did, however, suffer from other ills far more than today, such as those due to malnutrition and those associated with poor sanitation.

Both rich and poor were more fertile than they are today, and there was thus a type of community life of which we now see few instances. The evils of a declining birth rate are, most people agree, responsible in a number of ways for many nervous disorders. The call on the medical profession to treat neuroses *et cetera* was then, in the nature of things, likely to have been much less than it is today.

"Other times, other ways" is, as of most things, true of doctors of yesterday. The main difference distinguishing the doctor of today from his predecessor of yesterday is, so far as this study is concerned, nowhere more marked than in the field of education. By virtue of a more general education, the doctor of the older age was more apt in the treatment of what we now call "functional nervous disease". As a family doctor, he considered these disorders as all in the day's work. There was less fuss, and he did not have the handicap of competition with the wireless, an army of commentators (wise and otherwise) and Miss Dix.

The less elusive mental diseases, which were relatively much more common in the field of psychological medicine, formed the main part of the syllabus. This condition of affairs was as I found it in 1913. One learned nothing of the subject as a set course until the final year, so I was fortunate to have had my attention drawn to the importance of psychological factors in medicine in the early days of clinical training. It came about in this way. One day, two or three of us happened to meet Dr. Cyril Corlette outside one of the wards of Sydney Hospital. As was well known to all of our year at the hospital (this was the early days of its clinical school, our year being the third since the hospital had had an official clinical school), Dr. Corlette spoke slowly and not often. He said something to this effect: "You should always remember that, in the practice of medicine, there is more than medicine and surgery. The mental factor is most important. There is a book in the library by Schofield, 'The Mental Factor in Medicine'. I advise you to read it." This book gave me a new outlook on my work, and I have always felt grateful to Dr. Corlette for this and other sound advice and clinical instruction.

The course in psychological medicine consisted of a number of lectures, mainly on insanity, and practical demonstrations at the Hospital for the Insane. The lectures (which I found very interesting) were given by Dr. J. F. Flashman. Amongst my most vivid recollections was his description of a new method of diagnosis that was coming into use. The patient was asked to say the first word that came into his mind in response to hearing each of a series of words. After each word, he was asked to tell what word was suggested by the key word. The idea was that words that had an unpleasant association caused a delay in the patient's response, and in this way a clue was given to the underlying cause of the nervous upset. This idea of mental sleuthing, told in an inimitable way as our moustachioed lecturer paced up and down, appeared to us to be "very intriguing", in the parlance of the youth of today. To quite a number of his listeners, "Flashie" was the much esteemed "C.O." of the University Scouts.

The demonstrations by Dr. Andrew Davidson at Callan Park Hospital for the Insane were most diverting. The doctor had a delightful Scotch accent, and the radiating *bonhomie* that so frequently goes with it. As each patient came upon the stage, the two principals, in almost every instance, put on a good show for us—their audience. I am sure we all profited by this (to us) novel method of instruction.

I was most fortunate in my further training in psychological medicine as an undergraduate, as I was appointed clinical clerk (resident) at the Gladesville Hospital for the Insane. Thus I was able to learn something of the work of the alienist and of what went on within the confined domain of the so-called "asylum". The use of this word "alienist" has been somewhat unfortunate, as by its meaning it suggests the idea of something strange, if not sinister. This, I think, has been a factor in delaying the progress of psychiatry. Although the word was used in medical writings as long ago as the time of Celsus, and even earlier by other Latin authors, it was first used in connexion with the idea of one who treats the mentally sick in the latter part of the nineteenth century. My preconceived notions of Gladesville were not borne out by actual experience. With subconscious ideas, no doubt, I expected something of the uproar of the game of "Bedlam" of our youth. For similar reasons, probably, during my first few weeks' residence, I made the *faux pas* of referring to the male attendants as "warders". It took a little time to become facile on the use of the word "attendant" and to live down the misdemeanour. Apart from the court-yard, where the more advanced sufferers "took the air", there was nothing like "Bedlam". There were two separate sections of the mental hospital (as these institutions are now called), one being for those who were only recently ill and likely to recover, the other for patients with chronic mental disorders.

The fact that struck me most forcibly was that there were so few doctors to look after such a large number of patients. The medical staff might be classified as consisting of those who were making psychiatry their life's work and those who were not. Of the former, there was the medical superintendent, who was much occupied with the many problems of administration, and the officer to whom I was personally responsible, Dr. J. L. Wallace, in later years the head of the mental service in New South Wales. I was most fortunate in this association, as Dr. Wallace was one of the best types of Scottish graduates; in addition to being an excellent psychiatrist, he was interested in all aspects of medicine. He kindly put up with the many questions on mental disorder on which I sought enlightenment, frequently during the course of long walks. During one of these, from an eminence in the beautiful grounds of Gladesville, we saw Paddon beat Arnst for the world's sculling championship.

In regard to the small medical staff, it appeared to me that there was a great need for a modern pathology department and a resident pathologist, as much valuable clinical material was wasted.

I always regarded my stay at Gladesville as well worth while; I think every medical student should be resident in a mental hospital for at least one month.

My "year" at the University of Sydney was the last one to graduate before the commencement of the first world war. With an education which was mainly based on the classics, and with what I had been taught and had learned at the university and at the Sydney Hospital clinical school, and with five years' service in the Sydney University Scouts, I felt that I was able to cope with the various problems of a regimental medical officer on joining the 41st Battalion of the Australian Imperial Force. This battalion, recruited in Queensland and northern New South Wales, had a fine record, and was one that had little need of the services of a psychiatrist. There are, however, few better means of learning first hand many things a doctor should know than by serving as medical officer to a battalion.

The Armistice of 1918 marks the end of the period I have called the period of yesterday, and the beginning of my experience of the psychiatry of today. As an introduction, I wish to comment on a subject that is of current interest at the moment and bears closely on many aspects of the problems under discussion. The reference is to correspondence on the subject of "The Nervous Soldier", a book that I had not read at the time of writing this part of my paper, but which I had ordered. I shall therefore record my impression of the correspondence before and after reading the book.

The title "The Nervous Soldier" is, I think, unfortunate. Opinions may differ and some may think it right. One lay opinion was that it suggested a contradiction, such as "the delicate blacksmith". What the critics take exception to is the advice that "every medical officer must regard every officer and man as a potential exaggerator". If "medical officer" was intended to mean "regimental medical officer", one would conclude that the authors of the book had little if any length of service as regimental medical officers of Australian infantry battalions. Much better advice would be that the influence of a medical officer in his battalion is determined, not by what he says, but by his performance, particularly in action.

Since writing the preceding few paragraphs, I have read John Bostock and Evan Jones's work. It is difficult to make a case against the critics. After a careful reading of the book, I have been unable to find any qualification of the advice to regard the soldier as a potential exaggerator. Furthermore, in the section on prophylaxis, medical officer and regimental officer appear to be used as synonymous terms. (Incidentally, a description is suggested of a regimental aid post that could apply only under conditions of panic.)

Fortunately, few medical officers adopted the attitude about which there has been so much discussion. When they did so, the men soon sensed it, because Bacon's statement, quoted by the authors of the book, applies equally to the medical officers: "It is hard to find so great and masterly a dissembler or a countenance so well broke and commanded as to carry on an artful and counterfeit discourse without some way or other of betraying it."

It will be evident from what has been stated, and from other aspects of "The Nervous Soldier", that we have quite a new world in psychiatry of today. It should not be imagined that in the last war there were no psychiatric casualties for a regimental medical officer's attention. As a regimental medical officer, one received in routine orders advice on how to deal with psychological disorders. The number that occurred in a single unit was not great. This is borne out by a perusal of Colonel A. G. Butler's "Official History of the Australian Army Medical Corps in the War of 1914-1918". It is stated that from April, 1916, to March, 1919, of non-battle casualties admitted to field ambulances, under 4% of the total were of a psychiatric nature.

It was not until shortly before the Armistice that I heard, from medical officers, of the segregation of psychiatric patients and of the new methods being used in their treatment. In view of my early interest in and association with psychiatry, I determined, on returning to London, to see something of the new methods of treatment at first hand. Accordingly, I spent some time in seeing the practical application of the methods at Denmark Hill. The methods used here were those of "explanation and persuasion", and they were, of course, quite new to me. I met a number of the men responsible for, or associated with, the treatment—for example, Sir Frederick Mott, Dr. Bernard Hart and, through the kindness of Captain Davies (now Professor Davies of Sydney), Professor MacDougall. Professor Jung was invited to London, I understand, and I attended his lecture on the psychogenesis of mental disease. Unfortunately, I did not see the work of Dr. Hurst at Seal Hayne, of which I had heard much from colleagues who had gone there for courses of instruction.

Limited as was my study of this new work, I found that on my return to practice I was able to appreciate much better than formerly the psychological difficulties of my patients. Many of them were returned soldiers, and the details of service of some of them were well known to me. In far too many cases Australia did not prove a haven, and for these men the days of peace were not halcyon days.

Many patients were suffering from conditions not previously seen in civil practice. There were new labels and a new terminology to be learned, and some of them were very confusing. It is no wonder that treatment was, in many cases, unsuccessful. Personally, I found a number of cases similar to those I had seen in England, and was able to use the methods of "explanation and persuasion" with success at times. There were many patients, however, who did not respond to such treatment, and they were divisible into two classes: (*a*) those who required methods of treatment other than "explanation and persuasion" and (*b*) those who, in spite of treatment and some degree of recovery, could not make their way in civilian life.

The first group will receive consideration later. The second group provided a very difficult problem in repatriation. This was particularly so in the early days, when those concerned had little experience to guide them. Those responsible for repatriation and repatriates found themselves in an unfamiliar milieu. Attributes that made a man useful and efficient in the army did not necessarily qualify him for a job in civil life. In spite of good work done by all concerned, there were many mistakes. Psychiatric treatment was not so efficient as treatment in many other branches of medicine. Many doctors, faced with unfamiliar syndromes, were at a disadvantage. Many, too, did not appreciate the background of their patients' illness; for example, any medical officer who had not experienced a gas attack was at a disadvantage in estimating the disability of those who had become casualties from such form of attack.

Not only was treatment inefficient in many instances, but what was more important, there was not that dogmatism which is so necessary in prognosis and which is often of great therapeutic value. Without the assurance of their medical advisers that fears occasioned by their symptoms were groundless, and with many other worries, many good men experienced a sense of frustration that was indeed great. Consider for a moment their altered circumstances. They no longer had "a purpose firm". There was no obvious enemy to fight. *Esprit de corps* was a thing of the past. Then, too, their unit, which had represented home (and, to many, their only home), existed no longer. They belonged only to the leaderless legion of the lost.

In such circumstances, it is a tribute to repatriation medical officers that repatriation medical services had such a good record. Repatriation medical officers were in duty bound to apply the provisions of *The Repatriation Act*. Claimants for pensions who thought they were ill naturally expected treatment to restore their health, or, failing that, a pension that would allow them to live under reasonably good standards of living, act or no act.

After many years' experience as a member of pension assessment tribunals, I think it is correct to state that the great majority of the members of these tribunals have pointed out over and over again that pensioners would be greatly benefited if they all could be provided with work within the limits of their capabilities, and also that the greatest difficulties militating against the provision of such work were economic difficulties. It was indeed fortunate that most referees and repatriation medical officers did not regard every officer and man who came before them as potential exaggerators. The tragedy of the situation was that sufficient jobs of the kind needed did not exist in the labour market. Unfortunately, no ministry of rehabilitation existed to work in conjunction with that of repatriation. This error of omission should not be repeated.

It is not suggested that assessment tribunals do not make mistakes. Fortunately, when they occur, they are usually in the interest of the soldier. Many mistakes could be obviated if repatriation medical officers were present all the time the tribunals were sitting, to consult with the assessors.

In regard to psychiatric work, even when all its difficulties are admitted, there is far too much talk of "pensionitis", a caption that slips too glibly off the tongue and is too suggestive of passivity by psychiatrist and patient. In place of spending time on talking of pensionitis, we should recommend to statesmen the necessity for more efficient treatment and rehabilitation. There is a great need to follow the example of Mr. Henry Ford, who finds work for people in spite of their not being 100% fit. Such help is what so many need. It is only in this way that they will be able to retain faith in themselves.

Let us turn now to the first group of patients, those for whom more than simple methods of psychotherapy are necessary. Ineffective psychotherapy greatly increases the difficulties of pension assessment. At the end of the last war there were many doctors with little knowledge of psychiatry, and in consequence, as has already been noted, they frequently failed to cure their soldier patients, and what was worse, would not take the risk of making a mistake in giving advice as to prognosis. To refer to such unfortunate people as unconscious malingerers, as was done by a correspondent, is a contradiction in terms.

The treatment of my patients who did not respond to the methods which I had learnt, and which are well described in Déjerine's book on the psychoneuroses, left me in a quandary; but fortunately there were some of my colleagues who were interesting themselves in the new methods, and to these I turned for advice and help. I refer to Dr. Mathewson, who was at the time engaged to a considerable extent in the practice of psychiatry, to Professor Lowson, Research Professor of Medical Psychology in the University of Queensland, and to Dr. N. W. Markwell, who had recently obtained the diploma of psychological medicine in London. It at once became obvious to me that the new methods took up much time, far more than a busy general practitioner could afford. I was indebted to all three of my colleagues who undertook, with success, the treatment of a number of my patients. I also learned that I was ignorant of the new work, and was grateful for advice given as to reading *et cetera*. The time I write of was the early 1920's, and I think I am correct in stating that the first medical practitioner in Brisbane who had taken the diploma of psychological medicine was Dr. N. W. Markwell, whose paper on "The Heart and the Neuroses" was published in THE MEDICAL JOURNAL OF AUSTRALIA in 1926. Dr. Markwell's paper related his own experiences and told something of the contribution of Freud, MacDougall, Trotter and others who taught psychiatry. Discussion with him, before and after publication of the paper, was for me a most useful introduction to the new methods of psychiatry. Added interest was lent owing to the fact that I had met MacDougall and Trotter. I regretted that I had not known more of their work at the time of meeting them.

During the post-war years, in both the medical and lay Press, there was much acrimonious discussion on the work of Freud and his school. Having subsequently read translations of a good number of the works of Freud and others, I feel that many of the participants in the wordy warfare either had not troubled to read what these authors had actually written, or had been content with second-hand interpretations of their work. Many of these works rank as classics, and practitioners who have not read works such as Freud's "Introductory Lectures", "Psychopathology of Everyday Life", "Totem and Taboo" *et cetera*, will find that they are very interesting, and will profit greatly by reading them. They will, too, better understand psychiatric problems of everyday practice. What Freud has done for psychiatry was well told in a broadcast from America, during a discussion by a psychiatrist, a psychologist and a sociologist (one of the most recent examples of team work). The opinion of this very eminent trio was that the most important results of Freud's work were, firstly, that he was responsible for the theory of the unconscious, and, secondly, that he had made psychology a biological science. Most of the time of the discussion was occupied in a most interesting way with discussion on the foregoing considerations. It was then pointed out that, strange as it might seem, the word "sex" had not been mentioned in the discussion. It is most unfortunate, not only that much of what Freud has written about sex has been misinterpreted, but that this aspect has received so much attention to the exclusion of the other aspects of his work as mentioned in the broadcast.

Harking back to the time of thirty or forty years ago, I give it as my opinion that the general practitioners of those times were reasonably well qualified to treat the small percentage of mentally ill patients they were called upon to attend. Today, while the technical education of the doctor is much improved, it is regrettable that this has been achieved to a large extent at the expense of his general education. In decreasing numbers today we meet doctors who are also classical scholars, naturalists *et cetera*. Many such men were in the front ranks of the medical profession—for example, Joseph Bancroft, in whose honour we have in Queensland the annual Bancroft Memorial Lecture.

In the scramble for so-called education (and, incidentally, there is a great wastage of brain power, as many cannot afford the expense of education beyond qualifying for intermediate standard), there is much that masquerades as education, and it is a healthy sign that throughout Australia educational methods are being revised.

Just as the doctor has changed in type in the last thirty or forty years, so too have his patients, and their circumstances are very different. Society has suffered much in the last twenty years; pathological development has occurred, with very unhealthy growth in sociological and economic fields.

By reason of the altered trend of education, particularly in the direction of technical perfection, the great majority of new graduates prefer to be engaged in work with a technical basis. The present species of *Homo sapiens* practising medicine prefers to spend an hour in the practice of one of the many branches of surgery to giving up this time to a patient suffering from some trouble with a psychological origin. It must also be noted that the former employment pays much better. The doctor must not be unduly blamed on this account; he is only human, and must study his own economic problems, particularly in these times of high cost of living and high taxation.

The net result of these altered conditions of practice is that too few doctors are practising psychiatry in both general and special practice, and an increasing number of people need the psychiatric service (many of them, in their need, resort to quacks).

Even in public hospital practice, some specialist physicians and surgeons, either because they have not the knowledge or because they are too busy or too lacking in interest in everything beyond the range of their respective specialties, will not give attention to even the simplest psychiatric case. (An important factor in this is that there are in increasing numbers in the ranks of the medical profession many who have not served the very salutary novitiate of general practice.) The result is that, in place of the "beloved physician", we tend to have the master technician absorbed in the scientific aspect of a "case", forgetting too often that he is dealing with human material and human problems that need more than purely technical methods for relief.

It will be readily appreciated by those who give any thought to the matter that there is not much evidence of any great increase in the ranks of the psychiatrists. It has been my experience that few senior students and young graduates are desirous of joining this branch of the service. This is a serious matter, not only for medicine, but also for the State. It is only by giving some attention to the attitude of mind of those coming into the profession that we shall be able to understand why they feel as they do, and to remedy the position outlined.

There are quite a number, of course, in common with the community as a whole, who have not been able to rise superior to the inhibitions and taboos *et cetera* so interestingly described by Frazer in "The Golden Bough". To many, the idea of "black magic" surrounds the study of psychiatry. A further reason for the dearth of recruits is, as has been pointed out, that the education of the student from his earliest years is objective rather than subjective. He is a doer, rather than deliberately a thinker. Such attributes are accentuated because the doctor has, up till very recently, been called upon to serve people who are doers rather than thinkers. In support of this thesis, interesting evidence is available in the story of our public schools. The ranks of the professions have been largely recruited from the public schools, and while they have turned out a magnificent product, as their war record shows, they have produced very few statesmen.

Another thing that causes distaste for psychiatry is that the student is quick to note that the conditions of practice in most teaching hospitals are far from attractive. There is enough of the artist in the student to make him desire to spend his professional life under happier conditions. Finally, controversy surrounding the work of the Freudian school has been such that there is a general idea that there is something "not quite nice" about the practice of psychiatry and that it is not taken up by "the best people".

Conclusion.

It is not the purpose of this paper to do more than mention, as cures for these ills, the remedies that are necessary. Articles on this aspect of psychiatry are already appearing in the medical journals, and one only notes in passing the need for better education (primary, secondary and tertiary), a reconsideration of the work of the general practitioner in relation to the community as a whole, and improved conditions of psychiatric practice. And now these personal experiences of psychiatry of yesterday and today come to an end. In conclusion, it is to be hoped that, with better mental hygiene, there will be fewer calls on the psychiatrist of tomorrow.

CHRONIC GLAUCOMA OF TRAUMATIC ORIGIN.[1]

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ALL of us, as we accumulate experience, gain, however tardily, in wisdom. This wisdom is obtained at the cost of many mistakes and bitter disappointments and also by means of the clinical judgement that comes as the result of seeing a large volume of disorders of all kinds over the course of many years. It is, unfortunately, impossible to hand down the sum total of our experiences to others, who have largely to learn, as we did, by the method of trial and error. It is possible, however, to hand down some of the details of happenings in our medical life that have contributed to the sounder judgement to which even the most mediocre of us attain with the passing of the years. It is necessary to keep some record, for as I found when I set out to describe some cases of interest, the trees had become merged in the forest; the pathway back through twenty years of travel is difficult to find, unless one has blazed the trail. Text-books of ophthalmology, helpful friends as they are on many occasions, sometimes fail us when we set sail on uncharted seas; nor must we blame them, for they but give us the compass; it is for us to use it, and if we can chart some reefs upon which we and our trusting patients have foundered, perhaps we have not embarked on a vain enterprise.

I cannot find in ophthalmic literature any except the briefest mention of chronic glaucoma caused by trauma; yet how important it is to differentiate between primary chronic glaucoma, which invariably affects both eyes sooner or later, and secondary chronic glaucoma due to trauma, a condition which affects only one eye. Primary glaucoma, the most terrible of all eye diseases except neoplasm, is invariably bilateral sooner or later. It is therefore a matter of first importance, when one is confronted with glaucoma in one eye, to establish the fact of its being primary or secondary.

In March, 1940, I was consulted by Mr. W., aged twenty-eight years, who said that his right eye had "gone misty". The right pupil was sluggish, the disk was cupped and the tension was raised; the right nasal field was contracted.

[1] From a paper read at a meeting of the Newcastle Medical Discussion Club in January, 1944.

Visual acuity was $^6/_9$. The left eye appeared normal and its visual acuity was $^6/_5$. The intraocular tension of the right eye was forty millimetres of mercury. Both eyes were treated with eserine, but as the condition of the right eye did not improve under treatment, in July, 1940, I performed a trephining operation on the right eye. This lowered the tension to twenty millimetres of mercury. I continued watching this patient for signs of glaucoma in the left eye, keeping it under treatment with eserine.

In May, 1941, it occurred to me that I might have been too ready to accept this case as one of primary glaucoma, and on questioning the man I elicited a history of a severe blow on the right side of the face eighteen years earlier. His mother remembered how swollen his right eye was.

Today this man's left eye is still perfectly normal; there is now no doubt in my mind that he had an intraocular hæmorrhage at the time of his accident, causing a secondary and not a primary glaucoma. Whatever happens to the right eye, he will not develop glaucoma in his left eye, and he is free from the burden of constant eserine instillation, not to mention being free from the fear of eventual blindness.

This should have taught me a lesson; but in the interval between this case and the next I saw many patients suffering from primary glaucoma.

In June, 1942, Mr. J.W., aged sixty-three years, came for examination. His condition had been diagnosed as glaucoma by another oculist and as cataract by yet another. He had a hazel right eye, a brown left eye. The right pupil was normal; the left pupil was small and inactive to light, but active to accommodation—an Argyll-Robertson pupil. The Wassermann test failed to produce a reaction. The left disk was deeply cupped, and the tension was forty millimetres of mercury; normal tension is seventeen to twenty millimetres. The right eye was normal in all respects; investigation of the left field of vision revealed typical glaucomatous nasal contraction, with "Ronne's step". The visual acuity of the left eye was less than $^6/_{60}$. There was no cataract.

The patient was using pilocarpine in the left eye. I treated him with eserine, instilled twice a day into the left eye and at night into the right eye, and told him to report in two months. He returned in August, when the tension of the good eye was *"minus"* and that of the left eye was 35 millimetres of mercury instead of 40. The left eye's visual acuity was less than $^6/_{60}$, as it had been in June. The fields were as before. The *minus* tension in the right eye made me requestion the patient; he gave a history of an accident to the left eye, caused by a fall from a horse, sixteen years before. In March, 1943, the clinical facts were unaltered. I told him to report annually and reassured him.

In this case, too, I feel sure that an intraocular hæmorrhage was the cause of the glaucoma in the affected eye. The moral, of course, is the necessity of always taking a careful history. After this second case I have been on my guard.

On March 24, 1944, Mr. P.S., aged seventy-three years, consulted me and gave a history of a head injury from a motor-car accident four years ago. Dr. X had told him that he had a cataract in the right eye, and advised him to report when his eye was blind, when he would send him to an oculist.

The patient told me that his right eye had been painful for a fortnight. On examination, his right eye was blind and inflamed; the tension was 95 millimetres of mercury and the fundus was invisible. No cataract was present. The intraocular tension of the left eye was 22 millimetres of mercury, the field was full and the disk was normal.

I enucleated the right eye and assured my patient that he would not go blind for the term of his natural life.

On November 9, 1943, Mr. W.B.T., aged forty-four years, consulted me, giving a history of dimness of vision in the right eye. The tension in that eye was 45 millimetres of mercury; that in the left eye was 17 millimetres of mercury. The right disk was cupped. Visual acuity in the right eye was $^6/_6$ partly, and in the left eye it was $^6/_5$. One hour after the instillation of eserine (0·25%), the tension in the left eye was 35 millimetres of mercury instead of 45. The right field of vision was contracted, especially nasally. After a fortnight's use of eserine (0·25%), the tension in the right eye was 30 millimetres of mercury and visual acuity was $^6/_5$. The patient gave a history of a fall from a horse twenty years earlier, with injuries to the face.

On December 21, 1943, tension in the right eye was sixteen millimetres of mercury and in the left thirteen millimetres of mercury, eserine having been used in both eyes as a precautionary measure. On January 19, 1944, the visual acuity of the right eye was $^6/_6$ and of the left eye $^6/_5$. The tension in both eyes was sixteen millimetres of mercury. In March, 1944, the visual acuity of the right eye was $^6/_6$ and of the left eye $^6/_5$. The tension in the right eye was seventeen millimetres of mercury and of the left eye sixteen millimetres of mercury. The right visual field had improved and the left field was normal. The left optic disk was normal.

I advised the patient to report in one year.

Mrs. S.M.S., aged seventy years, consulted me on February 9, 1944. She gave a history of a hard blow on the right eye from her own fist four years earlier. On examination, the right eye was blind, the disk was cupped and the tension was fifty millimetres of mercury. The visual acuity of the left eye was $^6/_6$ and the tension eighteen millimetres of mercury. The left visual field was normal. I prescribed eserine (0·25%), to be instilled into the right eye three times a day, and asked the patient to report in six months.

This is a small series of cases and statistically of little value; but, taken in conjunction with the paucity of reports upon such cases and the extreme importance to both patient and doctor, I feel it to be of sufficient interest to be recorded. It is difficult enough to deal with true primary glaucoma, whether by miotics or by one or other of the various filtration operations, without needlessly adding to the anxieties of our patients and ourselves.

Reports of Cases.

INJECTION OF THE UMBILICAL VEIN TO PREVENT POST-PARTUM HÆMORRHAGE.

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Launceston.

THE following case history showing the value of injection of the umbilical vein as a prophylactic measure against post-partum hæmorrhage may be of interest.

Clinical Record.

Mrs. C., aged thirty-two years, was pregnant for the third time. At her first confinement nine years earlier she had had a severe post-partum hæmorrhage with retained placenta, and as the doctor who attended her said, she "nearly lost her life". I attended her at her second confinement in 1936, when she had another severe post-partum hæmorrhage; manual removal of the placenta was necessary, she suffered from profound shock, and had to be given glucose and saline solution *et cetera* intravenously.

She was very upset when she became pregnant again last year, and consulted the doctor who had attended her at her first confinement. The question of a therapeutic abortion was discussed, but she was persuaded that a Cæsarean section at full term and sterilization would be the best course. As that doctor had given up obstetrical work, he referred her to me, giving his opinion that as she had twice nearly lost her life, the above-mentioned course should be adopted. With this I agreed at the time; but later on in the pregnancy I decided to do what I have done many times in recent years—namely, anticipate a post-partum hæmorrhage by immediate and rapid injection of the cord with hot saline solution. I made this decision largely because at both the patient's previous confinements the first and second stages had been short and normal; it was only in the third stage that difficulties had been encountered.

At her third confinement on May 1, 1944, she had a natural delivery, in just under four hours. The baby weighed eleven and a quarter pounds. The syringe and hot saline solution were ready, and immediately the baby was separated, saline solution at 128° F. was rapidly pumped into the cord vein, about one and three-quarter pints being injected in a couple of minutes. The large, slack uterus contracted firmly, and the placenta was felt to be expelled into the vagina two or three minutes later. It was held there however, as could be demonstrated on the placenta after delivery, by a small portion which was caught by the contracted lower segment. Twenty minutes later, as I was going to give a second cord injection, the placenta and membranes were expelled complete. During the third stage the uterus had remained well contracted, and the total

amount of blood lost was not more than ten to fifteen ounces. The patient was very well, and in no way suffered from shock; but she could not understand that the delivery was concluded, and was apprehensive that something further would have to be done. She went home in fourteen days after a normal puerperium.

Comment.

Having used this technique in about 159 cases, I am convinced of its value, not only as a method of separation and delivery of a retained placenta—though it is certainly of use in this condition—but more particularly as a method of preventing or minimizing post-partum hæmorrhage. It is especially of value in such cases as the one described, as a prophylactic measure when post-partum hæmorrhage is expected, or after any intrauterine manipulation—"high forceps", manual rotation *et cetera*. After any such interference I now inject the cord at once; I have thus reduced my third-stage troubles very considerably, to the patient's and my own advantage. The procedure diminishes blood loss and shock, shortens the third stage and flushes out the uterus and vagina.

Though this is a simple operation, I suggest that at first a number of injections should be carried out on placentæ after delivery, to become accustomed to the technique and to perform it efficiently, without introducing air bubbles, *et cetera*. The veins in some cords are small, and it is not always easy to introduce the cannula into one. With a little practice the placenta can be rapidly engorged while the saline solution is still at the required temperature. The operation should take only two or three minutes.

The important points to be observed are the following.

1. In every delivery ward the simple apparatus and saline solution should be to hand ready for use. If this were so, the method would be taken advantage of more frequently.

2. The solution must be injected rapidly, since rapid increase in the bulk of the placenta is a factor in stimulating uterine contractions.

3. The solution should be at such a temperature that it reaches the uterus at about 115° to 120° F.[1]

4. At least a pint of the hot normal saline solution should be injected, as the response usually begins when this amount has been reached.

Reference.

[1] W. K. McIntyre: "Further Notes on the Control of Post-Partum Hæmorrhage", THE MEDICAL JOURNAL OF AUSTRALIA, December 12, 1942, page 517.

THE RH FACTOR AND PROGNOSIS.

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THE following case may prove of interest, since much discussion is now taking place concerning the Rh factor and the correct instructions to give to women seeking advice as to the prognosis of future pregnancies, once *erythroblastosis fœtalis* has made its appearance in the family.

Clinical Record.

Mrs. M.J., aged thirty-four years, in November, 1943, was delivered of a full-term infant weighing seven pounds nine ounces. She was referred to me by Dr. M. J. Eakin as of possible interest because of her obstetric history, which was as follows. Her first infant was born in 1935. It became jaundiced soon after birth and died on the thirteenth day after having received several blood transfusions. This pregnancy was followed within the next two years by three unexplained miscarriages at three months, five months and two months. A Wassermann test performed at this stage on both parents produced negative results.

No further pregnancy ensued during the next six years, during which period no contraceptive measures were taken. The patient then became pregnant for the fifth time, and the result was the above-mentioned normal infant. Treatment during pregnancy included the administration of progestin (two milligrammes a week for the first three months and two milligrammes a fortnight for the next six weeks) and wheat germ oil (five minims night and morning up to seven and a half months). The mother, an intelligent woman, said that this pregnancy had been entirely different from the the others. She had been ill practically throughout the pregnancy, and the position and movements of the fœtus were quite different from those of other pregnancies. In fact, everything was so different that she was convinced that the child would be of a different sex from the others. (It was, however, of the same sex as all previous fœtuses.) The infant was quite normal at birth, left hospital on the seventeenth day, perfectly normal and weighing eight pounds, and continues to be normal.

Examination of a specimen of blood taken on the eighth day after delivery showed that the mother's blood belonged to group O and was Rh-negative, and that the infant's blood was of group O and Rh-positive. The father's blood belonged to group O (his Rh type was not ascertained, but, of course, must be positive). The mother's serum contained potent anti-Rh antibody of anti-Rh specificity, of a titre of 32. The serum is being used in this laboratory for Rh testing.

Comment.

Why, then, was this infant unaffected? From the patient's history we could say with a fair degree of certainty that the Rh factor was involved in her previous pregnancies, especially since the husband's blood is of group O, so that the A and B factors could not play a part. Did the lapse of six years affect the course of events? Certainly a long interval between pregnancies should favour the fœtus, since we are dealing with an immunization phenomenon; but if this was the case here, we should expect a negligible or very weak antibody titre. Is the six years' relative infertility significant?

In any event, the case demonstrates the difficulty in giving a prognosis in such cases. It also shows that our knowledge is as yet insufficient to allow us to advise these women against future pregnancies.

Acknowledgement.

I am indebted to Dr. M. J. Eakin for permission to publish this case.

Addendum.

Since this case report was submitted for publication, an account by Dockeray and Sachs[1] has appeared of several similar cases in which mothers' blood contained Rh antibodies and the infants were unaffected.

Reviews.

INFANT FEEDING.

THE third edition of Dr. V. L. Collins's short book entitled "Infant Feeding"[2] differs little from the two previous editions, which have been justly popular. The publication is surprisingly cheap and it can be read comfortably in one evening.

In the new edition it is pleasing to see that the bogy of overfeeding on the breast is relegated to a minor place, and that underfeeding is stressed as responsible for most of the difficulties encountered.

Minor criticisms concern the mentioning of the intraperitoneal route for the administration of saline solution, which is surely obsolete; the use of the term "Lactone Syrup Milk" (a proprietary name) instead of lactic acid milk; and the advertisement given to the particular brand of malted milk which the author happens to prefer. But it is a very good book—good enough to stand by itself without the constant references, with page numbers, to a larger work by another author. These could well have been omitted, and the acknowledgement could have been made in the preface alone. Dr. Collins's book contains, in a simple and compact form, all that the general practitioner needs to know on the subject. It should provide a convenient "refresher" for men returning to practice from military service.

[1] G. C. Dockeray and H. Sachs: "Rh Antibodies in the Maternal Circulation without Clinical Manifestation of Erythroblastosis in the Child", *The Journal of Immunology*, Volume XLVIII, April, 1944, page 241.

[2] "Infant Feeding", by V. L. Collins, M.D. (Melbourne), M.R.C.P. (London), D.C.H. (London); Third Edition, 1943. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 8¼" × 6", pp. 76. Price: 3s. 9d.

The Medical Journal of Australia

SATURDAY, JULY 29, 1944.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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THE FUTURE OF MEDICAL PRACTICE: SOME RECENT DEVELOPMENTS.

BOTH in Great Britain and in Australia a great deal of discussion has taken place and is still taking place about the future of medical practice. Readers of this journal should by now be familiar with the views of the Federal Council of the British Medical Association in Australia on the matter and particularly with the principles which, it holds, should be guiding principles in any changes that are brought about. They also must be quite well acquainted with some of the schemes that have been devised, and with the general intentions of the Commonwealth Government that have been set out in a recently published brochure. More than this, members of the Association have been able to follow the activities of the Parent Body in England from the time when it first began to discuss the provision of a satisfactory general medical service for the nation and published a Draft Interim Report drawn up by the Medical Planning Commission in 1938, up to the present time when it is discussing the British Government's "White Paper". The problems in the Old Country and in Australia are very similar and this is but to be expected—the people in both countries are of a common stock, they enjoy the same kind of constitutional government, and are served by a medical profession whose members, though presenting minor differences dependent in large measure or latitude and longitude, are nevertheless welded together by a heritage of ideals and tradition as old as present-day civilization itself. In these circumstances Australian practitioners individually and the several Branches of the British Medical Association as collective units will see conditions the more clearly and be stimulated to seek a wise solution to their own problems, if they will follow the trend of events in England and try to understand the attitude of the Parent Association.

Ever since the "White Paper" was published in Great Britain various aspects of the document have been discussed in successive issues of the *British Medical Journal*. Important though these discussions have been, special attention should be directed to the *British Medical Journal* of May 13, 1944. This journal is received by every member of the Association in Australia, and those who do not study the issue in question will only have themselves to blame if they are ignorant of the views of the Parent Body when, as is bound to happen, they are referred to in Branch discussions of the Australian problem. The issue contains three significant documents—the first is a report of the council to the Representative Body (this takes the place of the first original article); the second is a forceful leading article entitled "Before Negotiations Begin"; the third is the annual report of council. The footnote to the opening report advising members in the Old Country to keep this number of the journal may well apply to members of the Association in Australia. The report is described as a draft statement of policy and is intended to be the basis of discussion at meetings of the whole profession called by Divisions throughout the country. These meetings are to be open to members and to non-members of the Association. For members of the Australian Branches it is not necessary to summarize the report in this place, since it is in the hands of every reader; to make the attempt would be to pander to laziness. What members should do is to mark the report and then to put pencil to paper and summarize the points for themselves. Having done this, they will find it a useful exercise first of all to find additional arguments in favour of the contentions of the report and then to set out in order the arguments that will be advanced by those opposed to it. In this way they should gain a complete understanding of the position in England, and they will be surprised to see how closely the contentions of the Home Council's report may be applied to Australian conditions and how closely the Federal Council's views correspond with those of the Parent Body.

The British Government wishes to introduce a nationalized service that shall be available to every member of the community "as a right, and irrespective of means, to all who want it, such service being paid for from insurance, taxation and rates". The profession in England is opposed to this 100% availability. As the leading article points out, the real issue is not whether money for health services should be collected in this way or that way, or should be distributed to those who render the services in the form of fees or of salary, but whether the medical profession is to be socialized—turned, in other words, into a body of men deprived of freedom of thought and action. It is true that according to the Minister private practice is to be allowed, and the Minister's statement in this regard will be found on page 648 of the *British Medical Journal*. This, however, will, so it appears, leave the profession in England cold, while the 100% availability provision stands. The Home Association may be pardoned for its inclination "to suspect that the inspiration of the Government's document is political rather than medical". At the same time it is important to remember, as the leading article insists, that "to agree upon the objects of national reconstruction in the field of health is

not necessarily to approve the methods or the time-table proposed". It must also be remembered that "controversy on the working out of the plan need not obscure the fact that the ideal of a healthier people is, and always has been, the ideal of the medical profession". In regard to the question of control, the report states that the medical profession will resist any control by the State which is inconsistent with its intellectual and professional freedom. Doctors, we read, must preserve their freedom to criticize the scientific work of their fellows and the organizations in which they work. The importance of this statement becomes clear when we remember that as a rule no member of a medical service may send contributions to a scientific journal without the consent of the head of the service or offer criticisms on questions of policy. The final section of the "general considerations" in the report states that until full details are known of the proposed administrative and professional arrangements and of the social security plan as a whole, and until more information is available as to the proposed machinery for safeguarding private practice among that section of the community which prefers it, the Association cannot commit itself to any acceptance of the 100% principle.

Several of the main features of the report by the Council of the Home Association to the Representative Body have been mentioned; other features of varying degrees of importance, but necessary to a complete summing up of the whole document, will become apparent and fall into their proper place when readers study it for themselves. In reminding readers once more that the report is only a basis for discussion, we may pass on to the situation in Australia. In a recent reference to the May meeting of the Federal Council we recorded the agreement of the Council to the appointment of a committee consisting of one member from each of the Branches together with the General Secretary to consult with representatives of the Commonwealth Government in order to explore the possibility of devising a service that would satisfy the requirements of the Government and also be acceptable to the profession. The Commonwealth Government has announced that it wishes to establish a national medical service that shall be free to every member of the community apart from what is paid in taxation. Ministers have also made it clear that the Government intends to go ahead with its policy, whether the profession agrees to cooperate or not. It hopes to find recruits for its service from medical officers of the armed forces on their demobilization and from those students who are receiving financial assistance from the Government to study medicine in the several medical schools of Australian universities. In these circumstances great responsibilities will fall on the shoulders of the members of the new committee. The Branches have now to make rapid and far-reaching decisions. They have to decide first of all whether they will accept 100% availability. They also have to consider the form of control of any service that may be devised and the form of contract, if any. In regard to control, they will be wise to pay heed to the Parent Body's views. As a matter of fact the documents published in the *British Medical Journal* of May 13, 1944, should help to bring the Federal Council's views and the opinions of Branch councillors into complete focus. As the *British Medical Journal* remarks, it is necessary to be clear headed in opposition and wholehearted in cooperation in reforms agreed to be necessary.

Current Comment.

SOME RECENT STUDIES ON SULPHONAMIDES.

THE literature on sulphonamides is now so vast that it is difficult to keep in touch with even significant developments. But the practical points which concern the technique of administration and control are really important, and even these are subject to emendation.

The effects of sulphonamides on the blood are now well known. Roy R. Kracke reminds us in a summary on this subject[1] that one of our earlier preoccupations, the occurrence of cyanosis, is now not regarded as an important complication. Hæmolytic anæmia, which should be looked for in the early days of treatment, is much more important, and may, as Kracke points out, be so severe as to be associated with renal blocking by released hæmoglobin. Leucopenia, and its dangerous degree, agranulocytosis, is a later complication, most frequently following sustained dosages, particularly if the total given is high. Blood platelet formation may similarly suffer and lead to hæmorrhagic episodes. There is nothing new in this; it is merely a convenient reminder. More topical are two studies concerning other aspects of toxicity of sulphadiazine, which is mild in its effects on the blood-forming organs.

The first of these studies concerns the statement which has been freely made that persons taking sulphonamides may show lassitude, impaired memory or judgement, mental confusion and loss of muscular coordination. It has been said that for this reason persons taking sulphonamides should not be allowed to carry out duties requiring nicety of perception, judgement and muscular performance. A. H. Price and J. C. Pedulla, who have investigated the effect of sulphadiazine on coordination and reaction time, point out that, although in general such a drug should be given only to patients in bed, it has been extensively used on apparently healthy people for the purpose of controlling epidemics such as meningitis, and such usage will probably be extended.[2]

The number of controlled studies is meagre. Price and Pedulla gave sulphadiazine to ninety healthy young men; the initial dose of two grammes was followed by a dose of one gramme every four hours till a total of nineteen grammes was reached. The average blood level was 9·5 milligrammes per hundred cubic centimetres. Tests were then carried out with special apparatus to assess coordination and vigilance, a dummy motor-car driving compartment with the usual controls being used, and the driver being confronted by a moving road scene. Thirty-eight of the ninety subjects made no complaint of symptoms suggesting a toxic reaction, thirty had a sense of fullness in the head, fifteen had insomnia, eleven had urinary burning and seven frequency of micturition, one had a rash and three were drowsy. However, the results obtained by the ninety subjects showed no significant difference from those of forty-four controls. Thus there seems to be little foundation for regarding incoordination as a common toxic symptom of sulphadiazine when given to healthy persons.

In another study on sulphadiazine the toxic effects of the drug as observed in 900 cases are compared with those of sulphamerazine administered in 428 cases. H. F. Dowling, E. Dumoff-Stanley, M. H. Lepper and L. K. Sweet, in carrying out this work[3] employed two dosage levels for sulphadiazine, high and low, and three dosage levels for sulphamerazine, high and intermediate, which were the same as the diazine dosage, and a low level. The initial doses were six grammes, two grammes and one gramme respectively, and the maintenance doses one gramme every four hours, 0·5 gramme every four hours, and 0·5 gramme every eight hours respectively. When it is remembered that owing to differences in absorption and excretion the effective dose for sulphamerazine is probably lower than

[1] *American Journal of Clinical Pathology*, April, 1944.
[2] *The Journal of the American Medical Association*, May 13, 1944.
[3] *The Journal of the American Medical Association*, May 13, 1944.

that of other members of the group, it seems fairer to compare the drugs by blood level rather than by dosage. These authors observed a 10% incidence of general toxic reactions to sulphamerazine as compared with 8·1% for sulphadiazine, but the figures are hardly comparable. Actually there was no real difference of importance found in the toxicity of the two drugs except in one particular, the occurrence of crystal deposits in the kidneys. This complication occurred more frequently with sulphamerazine, but if the high dosage group is removed from this drug's record, the greater frequency is not substantial. The writers consider that the hazard of renal block from accumulation of crystals in the kidneys is greater with sulphamerazine than with sulphadiazine, but whether fuller experience confirms this opinion or not, it is probably correct to say that in using sulphamerazine one does not escape this renal risk, already well recognized with sulphadiazine. Adequate administration of fluids and alkalis is necessary with both drugs.

A NEWLY RECOGNIZED TYPE OF RHEUMATISM.

To attempt the classification of the various types of disease entities may be almost regarded as a dangerous occupation. It may be dangerous to accurate thought, and may tend to obscure a clear concept of first principles, in spite of the love of teachers and students for labelled pigeon-holes. It may even at times be dangerous to the patient. Nevertheless classifications of disease are necessary even if the clinical and pathological labels do not always agree. The various types of rheumatism affecting joints or their related structures are most difficult to classify, as the cause is frequently obscure. Philip S. Hench, who has added to our knowledge and, it is hoped, our wisdom also on this subject, has written in association with Edward F. Rosenberg a long and detailed description of what he calls "palindromic rheumatism".[1] In case even the cross-worders and quiz listeners do not know what this means, the authors further describe it as a "new", oft recurring disease of joints. They describe 34 cases, and discuss its relations with other forms of joint disease and in particular refer to the arresting fact that there appear to be no sequels. Solis-Cohen and Kahlmeter have described under other names a condition which may well be the same; it is not surprising that one of these names is "allergic rheumatism", and indeed the name seems to be justified by the nature of the malady.

Hench and Rosenberg's first case was so characteristic that a brief summary of its features gives a good picture of this condition. The patient, a young woman, had large numbers of attacks of sudden pain and swelling in various joints, chiefly those of the feet. The onset was sudden on each occasion, the joints were usually affected singly, they became very red, and then within twelve to thirty-six hours they would be well again. Later on the attacks became less frequent, but lasted some days, and the large joints were also involved. She had a history of attacks of hives, and these attacks recurred usually during periods when there was freedom from joint trouble. Tonsillectomy and physical therapy afforded no relief. No causal factors were discovered; gout in particular was excluded on clinical and biochemical findings. After being under observation for a long period of years, this patient made a complete recovery, and over twenty years after the first attack her heart and joints were completely normal. All cases did not follow this pattern exactly. In others periarthritis of considerable severity occurred, and an interesting feature was the appearance of subcutaneous nodules. These nodules were tender, occurred at sites of pressure or trauma, and disappeared rapidly. The more severely affected patients seemed to benefit from rest, and the authors are inclined to think that this factor was more significant in treatment than others, such as the administration of ephedrine and of histamine, the local injection of procaine, and a course of triple typhoid vaccine. A number of valuable observations were made on fluid withdrawn from affected joints and on material obtained from subcutaneous periarticular and synovial tissues. During an attack the changes are those of an acute inflammation. Polymorphonuclear leucocytes appear in the synovial membrane, and there may be a fibrino-purulent exudate within the joint cavity. All this subsides, but fibroblasts are found for a short time in the synovia, though they disappear before long, leaving the joints normal. Even after many attacks no residual changes are found in the tissues. The lymphocytic infiltrations described by Fisher, Allison and others in the synovia in rheumatoid arthritis were not observed, nor were there any changes in the cartilage. Other laboratory studies throw no additional light on this disease.

In a clear analysis of the clinical findings Hench and Rosenberg describe the following features. It is a rare disease, attacking both sexes at almost any age after adolescence; it may last many years and disappears without leaving permanent changes. The attacks may be incredibly numerous and frequent, though great variations are found; their 34 patients had about 7,500 attacks in the aggregate. The number of joints involved at a time is usually only one, but may be several; any joint may be affected. Little constitutional reaction occurred during attacks, even in severe cases, and the degree of disability varied, though this was more often considerable. The occurrence of swellings in the paraarticular soft tissues was a feature in nearly 30% of the cases.

In a discussion on ætiology the authors recognize the resemblances to angioneurotic and allergic manifestations, but they cannot suggest a common cause. Infection seems to play no part in the condition. There seems no doubt that it is distinct from rheumatoid arthritis, and from gout. Many forms of treatment have been tried, but it does not appear that any of them have a definite relationship to the amelioration of the disease. It is at least comforting to know that no crippling occurred in any case. This communication is interesting, and perhaps more so because it embodies careful clinical observation such as lies within the scope of all practising physicians.

[1] *Archives of Internal Medicine*, April, 1944.

SIDEROSIS IN WELDERS.

ELECTRIC arc welding is a process that, in these days of rapid production, has become more and more widely used in many industries. There are thousands upon thousands of men who do nothing else, day after day. It is certain that great numbers of them will continue at the same occupation when peace returns. It is necessary that medical men should be aware of the hazards to which these men are exposed. The process of electric arc welding gives rise to fumes (if they can be so called) which consist of innumerable fine particles of metallic oxide. Poisoning may occur from the inhalation of these fumes. The disorders known as "fume fever", "brass founder's ague" and "cadmium fever" are well known to those who practise industrial medicine. But for the moment we are concerned here with certain chronic effects of iron fumes on the lungs. A special study of pulmonary changes in arc welders has been made by O. A. Sander.[1] He recalls that N. Enzer and himself described the radiological and pathological findings in 1938. Discrete, nodular shadows resembling those seen in silicosis are the characteristic radiographical feature. The borders of the nodules are more sharply defined and the hilar shadows are less prominent than in silicosis. Histological examination shows collections of iron pigment in the pulmonary lymphatics, and no proliferation of fibrous tissue or other evidence of tissue reaction. The foreign material in the tissues looks like carbon particles, from which it can be distinguished by suitable staining. Men affected are those who work in confined spaces and are subjected to high concentrations of fumes. According to Sander, no impairment of respiratory function occurs—a statement that should not be accepted without reservation. Medical practitioners should bear this condition of welder's siderosis in mind; it might readily be confused with silicosis.

[1] *The Journal of Industrial Hygiene and Toxicology*, March, 1944.

Abstracts from Medical Literature.

RADIOLOGY.

Radiological Types of Pulmonary Lesions in Primary Coccidioidomycosis.

JUSTIN R. COLBURN (*American Journal of Roentgenology*, January, 1944) classifies radiological evidence in 75 cases of primary coccidioidomycosis with the idea of establishing diagnostic criteria. Hilar shadow changes and observations during resolution are important. The primary stage of coccidioidal infection is an acute or subacute respiratory infection varying greatly in severity of clinical manifestations, usually in accord with the extent of the pulmonary lesions. However, because the initial lesion is evidently a low-grade bronchitis, radiological findings are often inconclusive. When sufficient numbers of coccidioides spherules attain the submucosa and lymphatics of the bronchi, their effects may be visualized radiologically. This was found to be true in 96% of 75 cases in which admission to hospital was necessary because of primary infections. Progressive involvement of distal bronchial and peribronchial tissues may produce radiological shadows identical with those found in bronchopneumonia or in tuberculosis when upper lobes are involved. Nearly as often, circumscribed lobular and sublobular exudates and infiltrates with associated dense hilar shadows appear. Regional and massive pleural exudates are fairly common, and cavitation may occur and persist despite apparent clinical recovery. The most constant finding is hilar shadow confluency, with widening and increased radioopacity. The most valuable diagnostic radiological criterion is delayed but fairly complete resolution, which places the disease midway between "acute" and "chronic" in the scale of pulmonary inflammations.

Inhalation Pneumonia from Nitric Fumes.

MORTIMER R. CAMIEL AND HENRY S. BERKAN (*Radiology*, February, 1944) state that the radiological features in cases of acute nitric fume inhalation are of particular interest. The X-ray appearance must be interpreted in the light of our knowledge of the type of irritant and the pathological changes that result. The inhaled fumes carried to the minutest bronchioles cause an irritative bronchiolitis, which is manifested in the radiograph as an irregular soft mottling throughout the lungs. These submiliary, pseudonodular patches of increased density follow the course of the bronchiolar tree and extend out to the very periphery of the lung. They have a more or less even distribution and show no hilar or central preponderance, as would the lesions of cardiac decompensation or pulmonary azotæmia, which they resemble. Although initially they tend to be discrete and pseudonodular, they subsequently merge and become confluent as œdema and minute areas of atelectasis are superimposed on the initial changes caused by irritative bronchiolitis and hyperæmia. Later, areas resembling confluent patches of bronchopneumonia may appear, and if bacterial invasion occurs, the radiographic picture will be further altered. If the lesion is rapidly fatal, the lungs are bathed in œdema fluid. In those patients who recover, however, the most striking radiological feature is the astonishing rapidity of resolution of the widespread exudative infiltrations. Serial radiographs taken only a few hours apart will reveal perceptible clearing. As the acute œdema subsides, the pseudonodular infiltrations disappear, leaving in their place only exaggerated lung markings caused by the composite shadow of engorged blood vessels and corroded bronchi and bronchioles. Within a few days even these last-mentioned findings are no longer seen. In favourable cases only four to ten days elapse from the time of exposure until complete disappearance of radiographic evidence of inflammatory pulmonary response. Unless infection supervenes, there are no residual manifestations.

The Causation and Characteristics of Cephalhæmatomata.

J. BLAIR HARTLEY AND C. W. F. BURNETT (*The British Journal of Radiology*, February, 1944) state that the radiological diagnosis and follow-up of cephalhæmatomata have been neglected in the past, and there is considerable scope for further detailed observations over long periods. Cephalhæmatomata must be differentiated from cranio-lacunia and craniofenestria. Cephalhæmatomata in the past have been thought to be due to minor forms of injury, in which vessels passing from the vault bones to the pericranium have been ruptured. Trauma is a reasonable explanation, if it is accepted that by that term is intended not only direct or violent pressure to the scalp. It is more reasonable to postulate that pressure not applied consistently at a point, but of a dragging or pushing nature, can produce a tearing or loosening of the pericranium from the bone over a localized area. Thus the posterior angles of the parietal bones are the most frequent sites of these swellings, as these constitute the presenting point of most vertex deliveries, whilst in the case of occipito-posterior deliveries the cephalhæmatoma are situated at the anterior angle. Occipital hæmatomata come next in frequency, whilst hæmatomata over the frontal bones are fewest, as these bones are the most guarded from pressure in the fully flexed head. Probably an initial hæmatoma is produced by the movement of the parietal bone downwards or across the promontory at the level of the inlet, or against the ischial spines or pubic arch at the level of the outlet. However, it is well known that many cephalhæmatomata result from labours which are relatively easy, and in which the pelvic measurements are of ample dimensions; conversely, it is well recognized that many babies are born after most difficult labours with no evidence whatsoever of the production of these effusions. It is probable that pressure alone cannot be the sole explanation of their production. There are possibly several contributory factors, one of the most important of which is that the bone underlying the cephalhæmatoma is imperfectly or incompletely ossified, so that at this point the blood vessels are particularly likely to be damaged or severed. The presence or absence of this abnormality would explain why so many difficult or prolonged labours fail to produce cephalhæmatomata, the majority of skulls being fully and normally developed at birth. A second contributory factor is that the tumescence does not result from a single exudation of blood under the pericranium, but from a series of small repeated hæmorrhages. Thus the size of the hæmatoma may depend, not only on the degree of underlying osseous defect, but also on the number of hæmorrhages that occur, and also on the time-spacing of such hæmorrhages. This explains the differences in angulation in the sides of cephalhæmatomata, for obviously the greater the number of hæmorrhages in any one area of the swelling, then the greater the height of elevation of the pericranium at that site, and the more acute the angle it forms with subjacent bone. Some degree of hypoprothrombinæmia may be considered to be an additional contributory factor in its causation, and the treatment of the condition should include the exhibition of a single dose of ten milligrammes of vitamin *K* analogue (2-methyl-1; 4 naphthoquinone) immediately upon the discovery of the lesion, since such a dose is known to be effective in preventing any appreciable fall in the prothrombin concentration of the infant's blood. Calcification occurs from both the bony and the pericranial aspects, leaving the centre of the swelling unossified; later, when ossification finally occurs in large cephalhæmatomata, the final picture resembles the inner and outer table effect of the adult skull.

Calcification of the Spleen.

EDWIN F. GRAY (*American Journal of Roentgenology*, March, 1944) found evidence of calcification in 57% of spleens removed at necropsy. The most frequent types of lesions were miliary calcified lesions, calcification of the splenic artery, calcification of the splenic capsule and calcium deposition within healed infarcts. Miliary calcification may occur at any age, but occurs most commonly after the age of thirty years. Calcifications of infarcts, the capsule and the splenic artery usually occur in patients of advanced age. The so-called miliary calcifications apparently represent calcified miliary tubercles. Evidence of systemic tuberculosis, active or inactive, is present in most instances.

Pulmonary and Osseous Manifestations of Tuberous Sclerosis.

ALFRED J. ACKERMANN (*American Journal of Roentgenology*, March, 1944) reports a case of tuberous sclerosis associated with pulmonary and skeletal changes. The polycystic lung disease is considered to be an expression of "embryoplasmatic dysplasia". The author states that the pathogenesis of the skeletal changes in tuberous sclerosis, and possibly also in neurofibromatosis, may perhaps be better understood if one associates them with those in the central nervous system, and if one sees in them an expression

of physiopathological disturbance rather than of embryonal tissue dysplasia. In the cases in which skeletal changes were present, the tubera were found to be located in the floor of the lateral ventricles and within the third ventricle. In other words, the lesions involved the thalamic and hypothalamic area of the brain. This probably explains the occurrence of *diabetes insipidus* in the case reported.

A New Gall-Bladder Contrast Medium: "Priodax".

LLOYD BRYAN AND N. S. PEDERSEN (*Radiology*, March, 1944) report the results of a clinical trial of a new gall-bladder contrast medium: B-(4-hydroxy-3, 5-diiodophenyl)-a-phenylpropionic acid. It is known commercially as "Priodax". The preparation was used in a grouped series of 845 consecutive unselected cases. It was found to cause less distress to the patient than sodium tetra-iodophenophthalein, and to be of considerably more value as a diagnostic contrast medium. The authors state that the opacity of the medium has seemed somewhat higher, although it is self-evident that this is something of an individual characteristic, and, being subject to variations in technique, is difficult to assay. Of particular value has been the practically complete absence of the opaque substance from the colon. This is due no doubt to the fact that it is entirely absorbed in the small bowel, and subsequently largely excreted in the urine.

PHYSICAL THERAPY.

Malignant Tumours of the Kidney.

L. C. BIXLER, K. W. STENSTROM AND C. D. CREEVY (*Radiology*, April, 1944) state that in spite of improvements in methods of treatment, the mortality rate from malignant lesions of the kidney remains high. Apparently the greatest obstacle to the reduction of this high mortality rate is the advanced stage of the lesion in most cases when the patient is first seen. Hæmaturia is the symptom most likely to bring the patient to the physician in time to make possible an early diagnosis. Therefore, every patient who has unexplained hæmaturia should be given a thorough urological investigation. Nephrectomy is the treatment of choice for malignant tumours of the kidney with the possible exception of Wilms's tumour. In Wilms's tumour irradiation seems to be of greater value than in any other malignant renal neoplasm and should constitute an important part of the therapy. If surgery is used, it should be in conjunction with preoperative and post-operative irradiation. X-ray therapy is a valuable adjunct to surgery: (i) it facilitates nephrectomy in many cases by reducing the size of the tumour; (ii) it possibly renders malignant cells dormant and reduces the danger of metastasis from manipulation at operation; (iii) it inhibits the growth of malignant cells which may be left behind. In cases not suitable for surgery and in which no metastases are present, X-ray therapy may be valuable in prolonging life and affording palliation. X-ray therapy is of value in the treatment of late metastases and recurrences. Life may or may not be prolonged, but relief of pain is frequently obtained.

Regression of Bone Metastases from Breast Cancer after Ovarian Sterilization.

M. RITTO AND O. S. PETERSON (*American Journal of Roentgenology*, February, 1944) point out that an extensive literature has accumulated in recent years stressing the importance of ovarian sterilization in the treatment of metastatic lesions from cancer of the breast. The most satisfactory results seem to be obtained in patients with osseous metastases. The absence or withdrawal of the ovarian hormone is apparently the important factor in producing the favourable results. The authors believe that there has been unquestionable prolongation of life in some instances. Details of eight cases are given, and it is noted that osseous metastases from cancer of the breast may regress or disappear completely after ovarian sterilization. There may also occur great relief of pain, general improvement in the physical and mental status, and prolongation of the patient's period of usefulness. The regression of the osseous metastases prevents pathological fractures with their resultant deformity and disability. Routine ovarian sterilization of all patients with cancer of the breast is not advocated, the treatment being confined to those in whom osseous metastases are found on X-ray examination. About one-third or more of these patients may be expected to show improvement.

The Treatment of Carcinoma of the Lung.

J. L. DOBBIE (*The British Journal of Radiology*, April, 1944) analyses 170 cases of primary carcinoma of the bronchus treated at the Christie Hospital Holt Radium Institute, Manchester, during the eight years from 1935 to 1942. In many instances the disease is advanced when the patients are first seen; 57% of the patients were noted as already having secondary spread, or in other words, 27% already had remote metastases outside the mediastinum. Not only is the bulk of patients in the younger age groups for cancer patients, but about 9% are aged between thirty and forty years. The author would like to see more notice taken of tomography as a means of diagnosis; he holds that this method is diagnostic of bronchial obstruction, that it is equally available for use in the upper bronchi, that it is an invaluable guide to bronchoscopy, and that it can form one stage in localization for beam-directed X-ray therapy. In this group there is a much lower percentage of positive findings on biopsy than some authors claim. In some of the cases in which biopsies gave a negative result, the histological structure was determined either by post-mortem examination or by biopsy of a gland. The tumour was of anaplastic type in 70% of these cases. All patients were treated by means of X rays. In discussing this treatment, it is necessary to separate the two different types of treatment used—palliative and radical. Palliative treatment was given in 111 cases, in which fields were necessarily large and doses were necessarily low. Of these patients, 26% lived for more than six months, and symptomatic relief was sometimes striking. The radical treatment is founded on the assumption that many of these tumours are quite small, and its effect is to give a high dosage to a small volume of lung surrounding the tumour (a sphere five or six centimetres in diameter). A dose of 6,000r in five weeks or an equivalent dose given at shorter intervals is prescribed. By this method 59 patients were treated, and of these eleven are alive and well, one at six years, one at five years and one at two years after treatment. There is reason to believe that with more accurate prescription of depth dosage to lung tissue, more consistent results will follow. It is possible that in the lung, as in some other sites, the most suitable lesions for surgical treatment are also those suitable for radiation treatment. The author has not found that irradiation of the lung with high dosages is itself harmful, as has so often been stated. The reason for this is probably to be found in the fact that the volume of tissue irradiated is kept as low as possible.

Treatment of Osteogenic Sarcoma with Pre-Operative Röntgen Radiation in Large Doses.

R. F. MCNATTIN (*Radiology*, March, 1944) states that the treatment of osteogenic sarcoma has been unsatisfactory even in the hands of the most qualified. In a review of 400 cases in the Registry of Bone Sarcoma of the American College of Surgeons, it was reported that early operation gave the poorest results, and also that irradiation alone did not effect a single cure. The author gives details of six cases in which consistently good results have been obtained. He is of the opinion that osteogenic sarcoma cannot be controlled entirely by irradiation alone or by operation, but operation following heavy irradiation gives the best prognosis. All osteogenic sarcomata should be considered radio-resistant and treated with a long protracted course of irradiation. The response of the lesion should be watched by serial radiographs, and if recession of the lesion occurs, indicating radiosensitivity, the total amount of irradiation may be made less so that subsequent amputation may be avoided. Otherwise irradiation should be continued well beyond the point usually considered as a tissue tolerance dose. Operation should be withheld until the first evidence of irradiation necrosis appears. Osteogenic sarcoma of bones other than those of the extremities should be treated more conservatively, as severe irradiation necrosis can become symptomatically as disabling as the primary disease. The delay in amputation involved in the prolonged series of X-ray treatments does not increase the likelihood of distant metastases. If metastasis is manifest within six months after the beginning of therapy, the process had occurred before any treatment was administered. Biopsy is contraindicated in all instances. Usually the radiograph is diagnostic.

British Medical Association News.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on June 22, 1944, at the Royal North Shore Hospital of Sydney. The meeting took the form of a number of clinical demonstrations by members of the honorary medical staff of the hospital.

Abdominal Tumour.

DR. E. D. CLARK showed a male patient, aged thirty-eight years, who had been admitted to hospital on March 28, 1944, with the diagnosis of acute appendicitis. He had suffered from pain in the right iliac fossa for one week; the pain had been severe for one day. He had had no diarrhœa or constipation, and no previous attacks.

On examination, tenderness and some resistance were found over McBurney's point, but no other abnormality was detected. Appendicectomy was performed. The appearance of the appendix was consistent with subacute appendicitis. A large, thick, omental mass, continuous with a thickening of the transverse colon, was palpated at operation. The patient's post-operative condition was good until April 10, when he complained of night sweats and pain in the lower epigastric regions. His appetite was good, but his bowel actions were irregular. A mass was palpable in the supra-umbilical region; it was tender and well circumscribed.

On April 19 the patient vomited and had some abdominal pain. Blood examination revealed that the hæmoglobin value was 72% and that the leucocytes numbered 12,500 per cubic millimetre, 3% being eosinophile cells. From April 29 to May 17 he had a "swinging" temperature, reaching a peak of 102° F. once a day. Pathological examination of a section of omentum removed at operation revealed inflammatory tissue, but no tuberculosis or neoplasm. The Wassermann test failed to produce a reaction, and examination of the stools revealed no pathogens. On June 19, examination after a barium enema revealed narrowing just distal to the hepatic flexure and the proximal section of the transverse colon, consistent with an organic stricture.

Cross-Leg Flap Graft.

DR. BASIL RILEY showed a male patient, aged sixty years, a labourer, who for about ten years had suffered from a painful corn beneath the fifth toe and on the ball of the left foot. In 1924 he was treated by X rays; this treatment was followed by an ulcer which would not heal. About August, 1943, the fifth and fourth toes were removed. In all he was unable to attend to his duties for eighteen months, and received no compensation for wages lost.

He was admitted to hospital on October 31, 1943, with a deep ulcerated area measuring two inches by two inches on the lateral margin of the left foot; a purulent discharge was present. The area involved was excised and the defect was restored by means of a cross-leg flap.

He was discharged from hospital on January 27, 1944. He was now doing full work, after having worn rubber boots without discomfort, and can walk any distance.

Dr. Riley also showed a male patient, aged forty-six years, a pensioner, who had been admitted to hospital on September 5, 1943, with discharging ulcers on the amputation stumps of both feet, present for six months. In May, 1938, all his toes had been amputated for frost bite; since then he had been unable to walk on account of pain.

The left amputation stump was treated by cross-leg flap, and he was discharged from hospital on December 11, 1943. He was readmitted to hospital on January 8, 1944, and the right amputation stump was treated by cross-leg flap. He was discharged from hospital on March 31, and at the time of the meeting was free of pain and able to walk two miles.

Squamous Carcinoma of the Lower Lip.

Dr. Riley also showed a male patient, aged fifty years, labourer, who during the past twelve months had undergone prolonged treatment for carcinoma of the lower lip, including excision of cervical glands and implantation of radium into the lower lip. He was admitted to hospital on April 8, 1944, with a discharging sinus of the lower lip. On April 26 a wide excision was performed, involving two-thirds of the lower lip, the left side of the face to the masseter border and one-half of the upper lip; the muco-cutaneous margins were approximated by means of a flap rotated from the left facio-mandibular junction. Microscopic examination of the tissue removed revealed gross and active invasion by squamous carcinoma. Further plastic procedures to restore the continuity of the mouth were outlined.

Diabetes Mellitus Treated with Globulin Insulin.

DR. DOUGLAS ANDERSON showed a number of patients receiving treatment for *diabetes mellitus* with globin insulin. Dr. Anderson described the preparation as "the answer to the maiden's prayer", because nearly all the patients to whom he had found it most expedient to give it and who had received it with benefit were young girls. Many of his young diabetic patients, especially girls, required at least two and sometimes three injections of insulin during the day in order to control their diabetes and maintain good nutrition; or, alternatively, if protamine insulin was given, as it generally was, one or more injections of ordinary insulin were required as well; if full control of the diabetes with a single daily injection of protamine insulin was attempted, hypoglycæmia would occur during the night or in the small hours owing to the prolonged action of protamine insulin. When globin insulin was given in the morning its action set in soon after breakfast, persisted strongly all day and (unlike that of protamine insulin) fell away at night and was just about gone next morning, so that full or sufficient control of the diabetes and maintenance of good nutrition with a single morning dose could often be achieved.

The first patient was a girl, aged thirteen years, who had formerly been taking 56 units of protamine insulin and 24 units of ordinary insulin each morning. She really needed another small dose of ordinary insulin before the midday and evening meals, but these were omitted to save injections, and a certain amount of glycosuria, not enough to be harmful, was ignored. She was given 64 units of globin insulin each morning, and this was found to control the diabetes as well as before, although there was still some glycosuria, which it was expected would diminish when she left the hospital.

The second patient was a girl, aged eleven years, who had formerly been taking 116 units of insulin per day, 68 in the morning and 48 in the evening. She could have done with a dose at midday, which was omitted for convenience. Protamine insulin was found to cause her painful lumps at the site of injection. Her condition was well controlled with 72 units of globin insulin each morning.

The third patient was a girl, aged thirteen years, who had formerly been taking 56 units of protamine insulin and 16 units of ordinary insulin each morning. Her condition was well controlled with 64 units of globin insulin each morning.

The fourth patient was a girl, aged twenty-one years, who had formerly been taking 28 units of protamine zinc insulin and 28 units of ordinary insulin each morning. Her condition was well controlled with 52 units of globin insulin each morning.

The fifth patient was a young man, aged twenty-six years, suffering from tuberculosis, who had been sent into hospital from a sanatorium, where he was receiving 52 units of protamine insulin and 40 units of ordinary insulin in the morning and 30 units of ordinary insulin before lunch and before dinner—a total of 152 units per day. The 52 units of protamine insulin were the largest dose that he could take without experiencing hypoglycæmia at night. For all this insulin was substituted a single injection of 144 units of globin insulin each morning, the dose having been cautiously increased to this amount; although he often passed much sugar in the urine, his diabetes was at least as well controlled as before, and he gained five pounds in weight in the first fortnight after the change. As he was febrile, and as his blood sugar level varied between very wide limits and from day to day, it was thought that the 144 units were enough to give him for the time being. He had felt as if he might be becoming hypoglycæmic in the night once or twice, so that he was given a late supper; after taking this he was not troubled.

The sixth patient was a girl, aged seven years, who had formerly been taking 18 units of protamine insulin and 16 units of ordinary insulin each morning. She was given at first 32 units of globin insulin each morning, and this dose was gradually increased to 48 units; this amount caused hypoglycæmia and was reduced again to 40 units, as she usually passed sugar in the urine in the early morning. Dr. Anderson was inclined to think that the change to globin insulin had been unsuitable for her and proposed to resume treatment with protamine and ordinary insulin.

Dr. Anderson said that diet was prescribed as for patients receiving ordinary insulin; but "snacks" between meals were added if the blood sugar level in the late forenoon or late

afternoon was found to be close to hypoglycæmic levels. Insulin was prescribed for all patients in multiples of four units to facilitate measurement.

Refractory Anæmia with Pigmentation.

Dr. Anderson showed a woman, aged thirty-six years, who suffered from cachexia, moderately severe anæmia with macrocytosis, hyperchromia and neutropenia, great impairment of hepatic function (which was about 30% of the average normal as estimated by the sodium benzoate conjugation test), digestive disturbances suggestive of chronic gastritis, buccal ulcers, falling out of the pubic hair, amenorrhœa, pigmentation of the exposed parts of the skin, and low blood pressure. She had not been well since the birth of her younger child, which had occurred when she was aged thirty years. She also had a tonic pupil, and as her illness progressed she had become very "nervy" and depressed. She had exhibited some symptoms suggestive of suprarenal cortical deficiency, such as attacks of nausea, vomiting, diarrhœa and cramps; but biochemical examination of the blood revealed no evidence of such a deficiency. She had been treated in the hospital eighteen months prior to the meeting, when, after full investigation without any remarkable finding, she was given injections of "Anahæmin". She then gained a stone in weight and became outwardly very well; the menses returned and the blood picture greatly improved, although not as rapidly as did her general health. The pigmentation faded and the pubic hair grew again.

The patient had remained fairly well until two or three months before the meeting, when anæmia and cachexia and the other symptoms rapidly returned despite monthly injections of "Anahæmin". On her readmission to hospital her anæmia was severe, and was associated with hyperchromia, macrocytosis and neutropenia. No reticulocyte crisis occurred after a large dose of "Anahæmin". A specimen of her sternal marrow was then taken for examination and was found to be crowded with mature neutrophile leucocytes, much as the marrow was in inflammatory disease. The patient was given transfusions of blood to overcome the anæmia, and was slowly improving in health.

(To be continued.)

Correspondence.

INGROWING TOENAIL.

SIR: In his paper on "Ingrowing Toenail", Captain Wilson gives a description of a number of surgical procedures for this condition. The last operation which he describes is the one which is now commonly employed at the 113th Australian General Hospital and was devised as the result of a special clinical investigation at the 113th Australian General Hospital during April to June, 1943.

By arrangement with Lieutenant-Colonel Starr, Officer Commanding, Surgical Division, all cases of ingrowing toenail during this period were admitted under my care and a number of procedures were tried. For some time prior to the investigation, the standard procedure had been removal of the nail and nail bed in whole or part, or wedge resection of the edge of the nail and nail bed. Of these two procedures, wedge excision was the more satisfactory where it could be applied. Cases were seen, however, in which the excision of the base of the nail bed had not been complete and in which portions of nail grew through the skin and required further operation. The final results of complete excision of the nail bed were satisfactory, but the wound left required from four to six weeks or more to obtain satisfactory healing. Amputation of the nail-bearing area of the distal phalanx was not practised, as it was felt that the operation was unnecessarily deforming, and one case was seen in which osteomyelitis had occurred in the remaining portion of the bone of the distal phalanx.

In the investigation, the following procedures were tested: (i) Excision of the nail and nail bed and an attempt to cover the nail bed by a flap of skin advanced from the base. (ii) Excision of the nail and nail bed and attempts to cover the defect by advancement of skin from the base and sides of the nail and from the skin at the top of the toe. Whilst in some cases the results of these procedures were good, they were not able to be applied in most cases.

The following procedure, therefore, was tried: (iii) Removal of the nail and peripheral excision of the proximal and lateral portions of the nail bed, so that the perionychium and lateral nail folds fell into position over the raw areas. This is the method described by Captain Wilson. This operation was found to be somewhat difficult owing to the necessity of complete removal of the tissue beneath the perionychium, and for this reason two lateral incisions were added at the base, one on each side, to facilitate this part of the operation. In its final form it was found that the best method was to make the incisions before removal of the nail, that is, an incision in each lateral fold and a horizontal incision beneath the perionychium. The nail is then removed. The two lateral incisions at the base are then added to allow the perionychium to be turned back to facilitate the removal of the growing area of the nail bed. The perionychium is easily damaged and should not be handled with forceps. The results of this procedure were much more satisfactory than when the nail bed was completely removed and healing took place within seven to fourteen days.

(iv) The operation was further modified in unilateral cases by merely removing the portion of nail at the side, together with its corresponding portion of the nail bed and growing portion.

(v) An attempt was made to proceed further by leaving the central portion of the nail and removing only the nail and nail bed laterally and proximally. This did not prove altogether satisfactory, as the cut portion of the base of the nail caught in the dressings and tended to tear off, whilst, at the same time, the nail was left without the power of further growth. This procedure was discarded.

(vi) In the early cases the lunule of the nail was completely excised. Where the lunule is large, this leaves an area between the perionychium and the cut edge of the nail bed, which is uncovered by matrix and delays healing. To obviate this, no attempt was made in a number of cases to remove the lunule completely, which was excised along a line corresponding to the edge of the perionychium. The nail grows in length from the tissues at the base of the nail beneath the perionychium and in width from the tissues of the lunule. This was apparent from these cases, in which a stub of thick nail grew at that portion of the lunule which was left.

(vii) Another procedure which was considered but not tried was skin grafting of the excised nail bed.

As a result of this investigation, it was found that the most satisfactory procedures in ingrowing toenail were: (i) In unilateral cases, either wedge resection or resection of the nail and its corresponding portion of the nail bed and growing end at the edge of the nail. (ii) In bilateral cases or where the nail was curved or otherwise deformed, removal of the nail and excision of the edges of the nail bed, the growing end of the nail and the lunule. (iii) It was further found that, where there was gross infection at the side of the nail, attempts to clear up the infection did not need to be long delayed, as the best method of dealing with it was by removal of the offending portion of nail and nail bed.

Yours, etc.,

225, Macquarie Street, V. M. COPPLESON.
Sydney,
July 11, 1944.

CLINICAL IMPRESSIONS OF SKIN DISEASE IN A TROPICAL OPERATIONAL AREA.

SIR: In his excellent paper "Clinical Impressions of Skin Disease in a Tropical Operational Area" in THE MEDICAL JOURNAL OF AUSTRALIA of July 1, Major W. Keith Myers describes "an undiagnosed eruption" which, he says, has many of the characters of *lichen planus* of hypertrophic type, but he hesitates to diagnose it definitely as this disease.

It is of interest that Major John V. Ambler, of the United States Medical Corps, in a letter appearing in the *Archives of Dermatology and Syphilology* in March last, and written from the same area, describes apparently the same condition in these words:

> Probably of greatest interest is the large number of cases of *lichen planus hypertrophicus*. During the last month I have counted 15 cases of severe involvement. They all follow the same pattern, starting suddenly with lesions resembling *prurigo nodularis* and then rapidly becoming violaceous and confluent over large areas. Small satellite lesions are typical flat-topped shiny papules. The mouth and lips are always involved. I saw one medical officer in whom the whole buccal membrane and tongue resembled thick leukoplakia.

Major Ambler is not so conservative in his diagnosis as Major Myers, and it appears an excellent opportunity of acquiring information on the unknown ætiology of *lichen planus*, if adequate facilities for research are available, because the number of cases reported by these two officers in a comparatively short time indicates that this disease is much commoner among the troops in the south-west Pacific area than it is in ordinary practice. Among the lines of inquiry followed one would like to see special attention paid to the possibility of a virus infection being the cause.

Yours, etc.,

PHILIP A. MAPLESTONE,
Honorary Dermatologist, Royal Hobart Hospital.

Lachlan Park Hospital,
New Norfolk,
Tasmania.
July 17, 1944.

ALLERGY AND THE NASAL SINUSES.

SIR: I read with considerable interest Dr. Culpin's letter in a recent issue of the journal with reference to vitamins *A* and *D* therapy (massive) in cases of recurrent nasal sinusitis. It seemed to me, however, that a note of warning should be sounded as to the possible dangers of over-dosage with vitamin *D*. This is the one vitamin in which over-dosage may be harmful, and I thought that a daily intake of 7,000 international units in a non-rhachitic patient with a relatively normal vitamin *D* intake from food and the effect of sunlight might well constitute over-dosage. The two effects mainly to be feared with vitamin *D* over-dosage are premature bony ossification and deposition of calcium in the kidneys. I must admit that since reading Dr. Culpin's letter I am now trying out the therapy, but I am restricting it to massive dosage with vitamin *A*.

Yours, etc.,

LANCE HEWITT.

10, Erskineville Road,
Newtown,
New South Wales.
July 12, 1944.

THE STORY OF A COMPLETE MEDICAL SERVICE.

SIR: Your leading article of July 8, 1944, should be studied by every medical man and every politician in Australia. It is not difficult to see why success was attained in Garfield's plan of medical service. It embraced four factors which are almost essential to success in any such plan; namely, it was voluntary, it was contributory, it gave a complete medical and hospital service, it introduced the best type of group practice.

Apart from the necessity of being decent law-abiding citizens, and their acceptance of measures necessary for the successful prosecution of the war, Australians as a class do not take kindly to compulsion, whether it be for military or industrial purposes, insurance, or anything else. Why should any person, whether layman or doctor, be forced into a general medical service whether he wants it or not?

The contributory idea is equally important. Any person who wishes to participate in the benefits of a scheme should be prepared to pay into it. The idea of something for nothing never has worked and never will work in a service of this sort. There might be some people who, for one reason or another, could not afford to pay the premiums. The medical profession, in conjunction with the State, would be prepared to look after them as it always has done in the past. There may be others of substance, who would not want to join. They could look after themselves.

A complete service covering both medical and hospital benefits is highly desirable. The deplorable weakness of the national health insurance plan was that it provided only a partial cover. Far too many things were excluded, and there was no provision at all for specialist's services. A hospital benefit would be a further improvement. It is the cost of hospital fees, just as much as the cost of medical services, that comes so hard on many people. A successful plan would lead at once to the provision of more and better hospital accommodation. Group practice on sound lines should be to the interest of patient and doctor alike. It should give a more efficient service at a lesser cost. There seems to be a general agreement on the desirability and value of group practice.

Is it beyond the wit and the capacity of the medical profession itself, in conjunction with the insurance companies, to devise and execute some plan on these lines? The alternative to some positive constructive effort would seem to be the docile acceptance of a plan such as that now being discussed for a general medical service on a salaried basis. Most medical men consider that such a service would not be in the best interests of the people, and would not willingly participate in it.

Yours, etc.,

D. R. W. COWAN.

163, North Terrace,
Adelaide,
July 17, 1944.

MARCH HÆMOGLOBINURIA.

SIR: Twenty years ago, I contributed a long paper[1] to THE MEDICAL JOURNAL OF AUSTRALIA entitled "The Paroxysmal Hæmoglobinuria of Horses and Cattle and of Man". My paper was "lifted" entire, and without asking, by a certain veterinary journal in Britain, which seems to show that it was thought interesting, whatever its real value. In my paper I indulged in some speculations which perhaps had nothing much in them. But there were one or two questions raised that invite attention as possibly relevant to the discussion of march hæmoglobinuria, referred to by Dr. Bryce in your issue of July 15, page 49.

The paroxysmal hæmoglobinuria of horses and of cattle is described as occurring when the animals are put to work after a rest. It may occur in more than one animal in the same stable, and may recur again and again. It is associated in severe cases with some autolytic changes situated in the great thrusting muscles of the posterior limbs. In mild attacks there may be albuminuria without hæmoglobinuria. I need not refer here to my speculations as to its cause or causes. But possibly they are in their way as good as those attributed to Gilligan and Blumgart in connexion with march hæmoglobinuria.

There is a paroxysmal hæmoglobinuria of man associated with a past history of syphilis, and this is brought on by exposure to cold, as mentioned by Dr. Bryce. It is attributed to a hæmolysis occurring within the blood vessels of a refrigerated part. It may occur within a finger subjected to immersion in cold water.

However, in my paper I pointed out that there were records of what seemed to be another type of human paroxysmal hæmoglobinuria, which bore (as I thought) some resemblance to the equine disease. In support I mentioned a case quoted by Copeman,[2] in which an attack of hæmoglobinuria followed a cold bath taken after extreme exertion at tennis. Another writer, Eason,[3][4][5] has referred to cases of paroxysmal hæmoglobinuria from exertion independent of cold, and he remarked on the curious feature that it is apparently leg work that induces these attacks. (Compare with affection of the powerful thrusting muscles of the hind-quarters of the horse.)

Then I mentioned the functional albuminuria found by Collier[6] in Oxford rowing crews after boat races, and proceeded to ask whether the hæmoglobinuria that occurred after severe exercise could not be in fact "a sort of pathological superlative, an exaggeration of a normal occurrence that in ordinary people reaches no higher than an albuminuria".

Two years after this the same thought was voiced independently by C. M. Finny[7] in a letter to the *British Medical Journal* under the caption "Functional Hæmoglobinuria". An officer, aged nineteen, who had recently arrived in Malta and who was not in good training, took part in a cross-country race on April 9. A short distance from the winning post he collapsed, and remained unconscious for over an hour. Finny saw him the following morning in hospital. Apart from a headache and a sense of general weariness, he stated that he felt quite fit. The only physical signs of disease which he presented were a slight rise of temperature and well-marked hæmoglobinuria. He was kept at rest, and by April 12 the urine was normal in colour, but still contained albumin. By April 15 the albuminuria had completely disappeared, and did not recur after he was allowed to leave his bed and walk around. Finny's comment was: "It seems reasonable to assume that the hæmoglobinuria in this case was induced by the excessive exertion and was merely a more advanced stage of functional albuminuria."

Seeing that albuminuria occurs in athletes after a boat race, it seems likely that, if looked for, it will be found in soldiers after a route march.

It seems to me, further, that the paroxysmal hæmoglobinuria that is sometimes seen to follow severe exertion may be cognate to the equine condition. In this connexion,

does anybody know whether albuminuria is common in racehorses after a strenuous race? I shall be rather surprised if it does not occur.

Yours, etc.,
C. E. CORLETTE.

175, Macquarie Street,
Sydney,
July 18, 1944.

References.

(a) C. E. Corlette: "The Paroxysmal Hæmoglobinuria of Horses and Cattle and of Man", THE MEDICAL JOURNAL OF AUSTRALIA, Volume I, 1924, page 429.
(b) S. M. Copeman: "The Pathology of Paroxysmal Hæmoglobinuria", *The Practitioner*, Volume XLV, 1890, page 161.
(c) J. Eason: "The Pathology of Paroxysmal Hæmoglobinuria", *Edinburgh Medical Journal*, Volume XIX, 1906, page 43.
(d) J. Eason: "The Pathology of Paroxysmal Hæmoglobinuria", *Journal of Pathology and Bacteriology*, Volume XI, 1906, page 167.
(e) J. Eason: "Hæmoglobinuria", *Encyclopædia Medica*, Second Edition, Volume V, 1917.
(f) W. Collier: "Functional Albuminuria in Athletes", *British Medical Journal*, Volume I, 1907, page 4.
(g) C. M. Finny: "Functional Hæmoglobinuria", *British Medical Journal*, Volume II, 1926, page 685.

"NATIONAL FITNESS."

SIR: From time to time, between long periods of apathy or open antagonism, the Australian Press and public is assailed by doubt and gives way to flurry in the matter of national health and "fitness"—whatever that may mean. Obviously, in a community such as ours, a likely occasion for such an outburst presents in the nation-wide moral, mental and physical stocktaking and overhaul involved in participation in a world war; wherein, of necessity, the sacrosanctity of individual "rights" is seen to be conditional, not absolute, and *salus populi* to be *suprema lex*; and when "money" becomes known for what, properly, it is—a means to an end, to wit, the employment of the nation's manpower and resources for the benefit of—the nation!

This has been so in the past; and public approval of a "forward move" is again evident. I do not think that I need quote chapter and verse as to this. The practical purpose of the letter is to draw attention to the fact that the examination of recruits, and discharge of "unfits", might help to provide the data essential to a scientific approach to the question. As is well known, the war of 1914-1918 was made by the United States of America the opportunity for such stocktaking, the results of which were embodied in a monumental volume on "Defects Found in Drafted Men". No serious study of the problem was made in Australia. The only attempt known to me is set out in the following memorandum sent to the commandants of all military districts by the Director-General of Medical Services, Australian Army Medical Service, Surgeon General Fetherston, in March, 1917.

Cause of Rejection of Recruits for Enlistment in A.I.F.

A return showing the cause of rejection of Recruits for enlistment in A.I.F. in each District will be prepared and forwarded to Headquarters giving: (*a*) total examined in District, (*b*) total rejected, (*c*) cause of rejection, each class to be shown separately.

Causation.—Two competent and suitable Medical Officers who have had full experience in examination of Recruits in each District will be asked to submit separate reports giving their personal opinion as to the causation of the defect which caused rejection of Recruits examined by them, together with their opinion as to whether such causes are preventable or remediable.

This latter information is desired from a Public Health point of view. This return is to be treated as urgent.

I am not able to say what came from this inquiry—certainly the results were inconspicuous. But it does seem to me that, if not too late, we should seize the chance of securing any useful result possible from the Upas-tree of war. Perhaps this has been done. It would help our new medical historian—when we catch one!

Yours, etc.,
A. G. BUTLER.

Australian War Memorial,
Canberra,
July 18, 1944.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 134, of July 6, 1944.

ROYAL AUSTRALIAN AIR FORCE.

Citizen Air Force: Medical Branch.

Wing Commander A. S. de B. Cocks (281255) is transferred from the R.A.A.F. Reserve for part-time duty with effect from 30th April, 1944.

Pilot Officer M. E. Griffiths (423105) is granted the acting rank of Flight Lieutenant whilst occupying a Flight Lieutenant post with effect from 27th April, 1944.

The probationary appointment of Flight Lieutenant J. H. P. Abbott (267131) is confirmed with effect from 4th April, 1944.

The following Flight Lieutenants are transferred from the Reserve with effect from 9th April, 1944: D. B. Pearce (257111), L. L. Marshal (7388), A. Bardsley (257498), H. H. Martin (257505), W. B. Stafford (257510), J. H. Cloke (257500), G. P. Cromie (257501), W. M. C. Keane (257559), J. W. Gardiner (257561), D. B. Duffy (256830).

Reserve: Medical Branch.

The following Medical Practitioners are appointed to commissions on probation with the rank of Flight Lieutenant with effect from the dates indicated: William Patrick McDonough, M.B., B.S. (267694), 6th April, 1944, Denis Morley Clarke, M.S., B.S. (257635), 10th April, 1944.—(Ex. Min. No. 185—Approved 5th July, 1944.)

The Royal Australasian College of Surgeons.

MEETING OF THE BOARD OF CENSORS.

THE next meeting of the Australian Board of Censors of the Royal Australasian College of Surgeons will be held at the College, Spring Street, Melbourne, in October, 1944. Candidates who desire to present themselves at this meeting should apply to the Censor-in-Chief for permission to do so on or before August 31, 1944. The appropriate forms are available at the College, Spring Street, Melbourne, and at the offices of the various State secretaries.

Notice.

THE Section of Neurology, Psychiatry and Neurosurgery of the New South Wales Branch of the British Medical Association has arranged to hold two meetings, one on August 17, 1944, and the other on September 7, 1944. Both meetings will be held in the William H. Crago Council Room, British Medical Association House, 135, Macquarie Street, Sydney. At the first Dr. Gilbert Phillips, Dr. Geoffrey Tripp and Flight Lieutenant Ian Gardiner will read papers on radiography and electroencephalography; at the second Dr. S. J. Minogue will read a paper on suicide.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Pigott, Francis Paton, M.B., B.S., 1942 (Univ. Sydney), c.o. "Cadara", Tottenham, New South Wales.
Byrne, Ross, M.B., B.S., 1941 (Univ. Sydney), 7, Springfield Avenue, Kings Cross.
Garvan, John Michael, M.B., B.S., 1940 (Univ. Sydney), 67, Lamrock Avenue, Bondi.
Fay, Roscoe Woodrow, M.B., B.S., 1943 (Univ. Sydney), Newcastle Hospital, Newcastle.
Ruprecht, Ronald Herbert, M.B., B.S., 1944 (Univ. Sydney), 4, Salisbury Road, Stanmore.

The undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Benson, Lois Ellen, M.B., B.S., 1941 (Univ. Sydney), 13, Dudley Road, Rose Bay.

Blaxland, Peter Dudley, M.B., B.S., 1943 (Univ. Sydney), 4, Trahlee Road, Bellevue Hill.

Coldits, Gordon Manning, M.B., B.S., 1944 (Univ. Sydney), Sydney Hospital, Macquarie Street, Sydney.

Corbett, Walter Harold, M.B., B.S., 1943 (Univ. Sydney), Newcastle General Hospital, Newcastle.

Dwyer, Allan Frederick, M.B., B.S., 1942 (Univ. Sydney), 11, Mann Street, Gosford.

Hudson, Roger Selwyn Barrow, M.B., B.S., 1944 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

Hughes, Kenneth Tamworth, M.B., B.S., 1933 (Univ. Sydney), M.R.C.P. (London), 1937, Major K. T. Hughes, 2/6 Australian General Hospital, A.I.F., Australia.

Lindsay, Robert Alfred, M.B., B.S., 1944 (Univ. Sydney), Newcastle Hospital, Newcastle.

McGrath, David Henry, M.B., 1942 (Univ. Sydney), NX200500, Captain D. H. McGrath, 105 Australian Lt. Field Ambulance, A.I.F., Australia.

Ridley, Dorothy Edith, M.B., B.S., 1943 (Univ. Sydney), 13, Hector Road, Willoughby.

Siedlecky, Stefania Winifred, M.B., B.S., 1943 (Univ. Sydney), Women's Hospital, Crown Street, Sydney.

Storey, Joan Evelyn, M.B., B.S., 1944 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

Taylor, William George, M.B., B.S., 1944 (Univ. Sydney), Royal North Shore Hospital, St. Leonards.

Wells, Rosina, M.B., B.S., 1944 (Univ. Sydney), 132, Ramsgate Avenue, North Bondi.

Spence, Laura Waring, M.B., 1933 (Univ. Sydney), 19, Murdoch Street, Cremorne.

The undermentioned has applied for election as a member of the Victorian Branch of the British Medical Association:

Epstein, Zygmunt, M.D., 1937 (Univ. Rome), 167, Barkly Street, Footscray, Victoria.

Obituary.

RODERICK JOHN AITCHISON.

WE regret to announce the death of Dr. Roderick John Aitchison, which occurred on July 18, 1944, at Melbourne.

PERCIVAL CHARLES HOLDEN HOMER.

WE regret to announce the death of Dr. Percival Charles Holden Homer, which occurred on July 23, 1944, at Newport, New South Wales.

Medical Appointments.

THE undermentioned appointments have been made at the Mareeba Babies' Hospital, South Australia: Dr. Helen Mary Mayo, Honorary Consulting Responsible Medical Officer; Dr. Malcolm Turner Cockburn, Honorary Physician; Dr. Constance Alice Finlayson, Honorary Physician (Temporary); Dr. Frederick Neill Le Messurier, Honorary Physician; Dr. Annie Mildred Mocatta, Honorary Physician (Temporary); Dr. Ronald Keith McKenzie, Honorary Physician (Temporary); Dr. Richard Geoffrey Champion de Crespigny, Honorary Assistant Physician; Dr. Robert Hugo Elix, Temporary Honorary Assistant Physician; Dr. Constance Alice Finlayson, Honorary Assistant Physician; Dr. Henry Arthur Goode, Honorary Assistant Physician (Temporary); Dr. Douglas Gordon McKay, Honorary Consulting Surgeon; Dr. Harold Alexander McCoy, Honorary Radiologist; Dr. Bertram Speakman Hanson, Honorary Assistant Radiologist (Temporary); Dr. William Carrick Tunk Upton, Honorary Dermatologist.

The following have been appointed resident medical officers at the Royal Adelaide Hospital: Dr. Nigel Drury Gresley Abbott, Dr. Jack Sidney Anderson, Dr. Francis Callum Archibald, Dr. Max Sylvester Cooling, Dr. John Alyward Lewis, Dr. Geofrey Agar Leyland, Dr. John Stark Skipper.

Diary for the Month.

AUG. 1.—New South Wales Branch, B.M.A.: Organisation and Science Committee.
AUG. 2.—Western Australian Branch, B.M.A.: Council Meeting.
AUG. 2.—Victorian Branch, B.M.A.: Branch Meeting.
AUG. 4.—Queensland Branch, B.M.A.: Branch Meeting.
AUG. 4.—Victorian Branch, B.M.A.: Legislative Subcommittee.
AUG. 8.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
AUG. 8.—Tasmanian Branch: Branch Meeting.
AUG. 11.—Queensland Branch, B.M.A.: Council Meeting.
AUG. 11.—Victorian Branch, B.M.A.: Ethics Subcommittee.
AUG. 14.—Victorian Branch, B.M.A.: Hospital Subcommittee.
AUG. 14.—Victorian Branch, B.M.A.: Finance Subcommittee.
AUG. 15.—New South Wales Branch, B.M.A.: Medical Politics Committee.
AUG. 15.—Victorian Branch, B.M.A.: Organization Subcommittee.
AUG. 16.—Western Australian Branch, B.M.A.: Branch Meeting.
AUG. 17.—Victorian Branch, B.M.A.: Executive Meeting.
AUG. 22.—New South Wales Branch, B.M.A.: Ethics Committee.
AUG. 23.—Victorian Branch, B.M.A.: Council Meeting.
AUG. 24.—New South Wales Branch, B.M.A.: Clinical Meeting.
AUG. 25.—Queensland Branch, B.M.A.: Council Meeting.
AUG. 31.—New South Wales Branch, B.M.A.: Branch Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

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